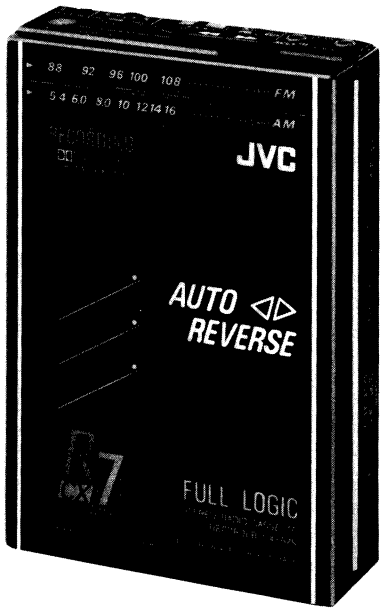
JVC

SERVICE MANUAL

STEREO RADIO CASSETTER

MODEL CX-R7K



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1 Continuity Test at Overhaul

■ Auto-stop function

When the governor P.C. board is removed from the mechanism section, the auto-stop function becomes in operation since the hall IC circuit is activated in this condition.

To release the auto-stop operation in this state, shortcircuit between the two roundings on the governor P.C. board with a short wire and the like. (See the figure below.)

Make sure to remove the wire after checkup or servicing.

■ Tape detection switch

Without a tape loaded, the motor does not rotate on account of the function of the tape detection switch. To rotate the motor without tape loaded, shortcircuit the two roundings on the governor P.C. board by soldering. (See the figure below.)

Make sure to unsolder after checkup or servicing.

■ REC safety (erroneous recording prevention) function

To release this function (to make the set in recording mode with a cassette having no REC safety tab, or, without a cassette loaded), shortcircuit the two roundings on the governor P.C. board by soldering. (See the figure below.)

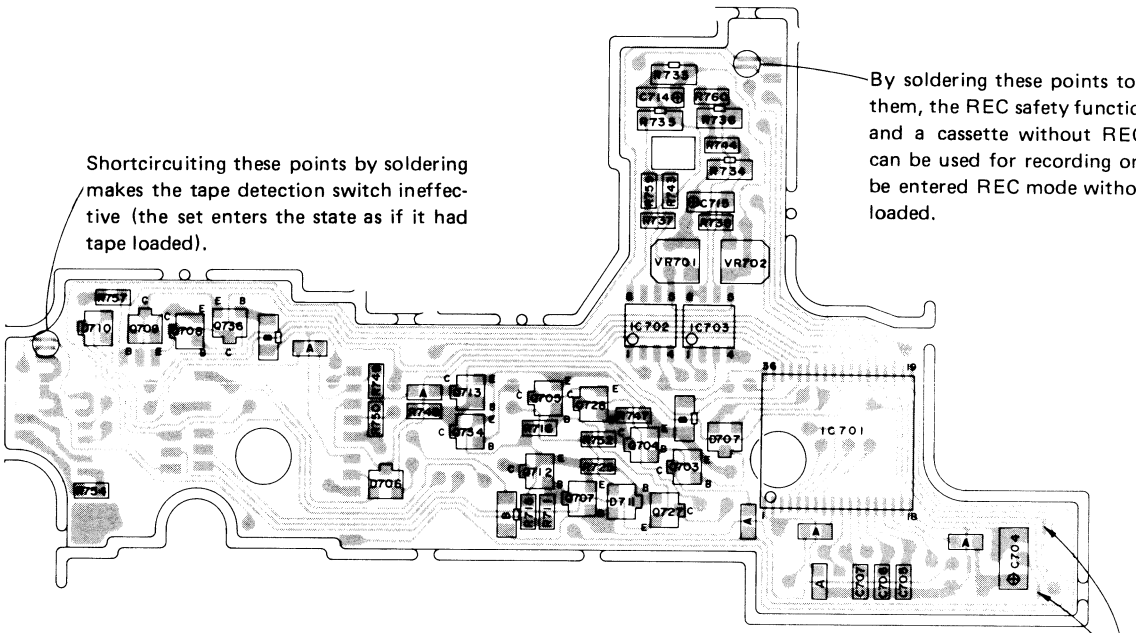


Fig. 1-1

■ Function of operation switches (keys)

1. Relating to the radio and the [RADIO] key

1) [RADIO] key is not an ON/OFF key but a source selection key. To stop the radio, press the [STOP] key.
2) In radio reception, pressing the [◀▶] key shifts the mode to FWD Play.
3) Pressing the [RADIO] key shifts the set mode for radio reception except in the mode of recording with a microphone.
4) In the FF/REW mode, pressing the [RADIO] key stops the mechanism operation and enters the set into the radio reception mode.
5) If the [STOP] key is pressed in radio reception, only the recording stops, while, radio reception continues. By pressing the [STOP] key once again, radio reception is turned off. (Depressing the [STOP] key for a while stops the mechanism operation and turns off the radio at the same time.)
6) Pressing the FF/REW key in radio reception turns off the radio and shifts the set's mode into FF/REW.

Note: STOP key is given priority to all other keys.

2. Relating to recording

1) For recording, press the [◀▶] key a moment after depressing the [○] key (two keys are pressed).
2) Recording can be started only when the radio is turned on or the tape is in the STOP mode.
   Stop → Recording → Recording through the mic.
   Radio reception → Recording → Recording of broadcast received.
3) Confirmation of recording:
   It can be checked by observing lighting conditions of LEDs (see the following table) or by monitoring recording source.
   (When only the LED of FWD or REV lights, the set is in playback mode.)
4) Recording is performed in the FWD/PLAY mode without regard to ⇄ , ⊂ , ↻ mode indication.
   All the recording operations stop by the auto-stop function except in the RADIO REC mode, in which only recording stops leaving the radio in receiving mode.

3. Safety lock switch

When this switch is set to the LOCK side, all operation keys become inoperative.

4. Pause switch

1) This set enters the pause mode even in FWD/REV and FF/REW operations by stoppage of motor rotation since an electrically pausing system is adopted in this model.
2) When the pause switch is turned on, every operation key becomes inoperative.

5. Lighting modes of LEDs

	RADIO	FWD	REV
FWD PLAY/FF		○	
REV PLAY/REW			○
MIC REC		○	○
RADIO	○		
RADIO REC	○	○	○

- **Battery check:** Replace the battery if the FWD and REV LEDs do not light in the corresponding operation.

2 Removal of Main Parts

■ **Removal procedure of main parts (in relation to other parts to be removed at the same time)**

Proceed parts romoval in the order shown in the following table, and refer to the following explanations for details.

Other parts to be removed / Objective parts to be removed	Cassette door	Stabilizer	Bottom cover	Operation panel	SW P.C.B.	Inner lay (orna-ment)	Dial cover	Main P.C.B.	Mecha-con P.C.B.	Reel unit	SC bracket
Bottom cover, Inner lay Stabilizer	1										
Pinch roller, E. head, R/P head	1	2									
Head replacement: Head P.C.B.	1		2								
Head replacement: Operation panel											
SW P.C.B.	1		2	3							
Bar antenna	1		2	3	4						
Main P.C.B., Dial indicator	1		2	3		4	5				
Mechacon P.C.B., ACT motor	1		2	3		4	5	6			
Belt, Flywheel, Mecha-nism ass'y, Reel motor	1		2	3		4	5	6	7		
Main pulley	1		2	3		4	5	6	7	8	
Mechanism chassis	1		2	3		4	5	6	7		8
Sub chassis	1										2

■ Cassette cover

1. Slide the eject button in the direction of the arrow mark and open the cassette door.
2. Remove the two screws (1) from the both sides of the door cover.
3. Remove the door cover.

Then, adjustment and replacement of the R/P head can be performed.

Note: If two screws (6) and (10) are removed, the cassette cover can be removed as the bracket is still fixed. For removing the cover, press it in the direction of the DC jack.

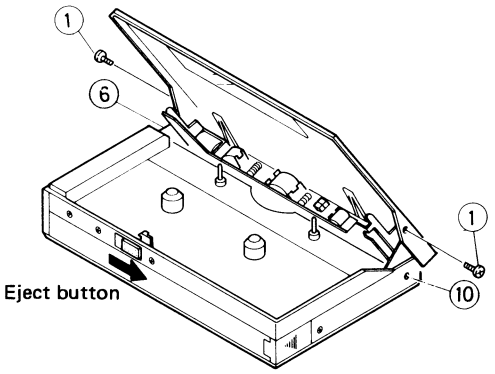


Fig. 2-1

■ Ornament (Inner lay)

Remove the two screws (4) securing the inner lay.

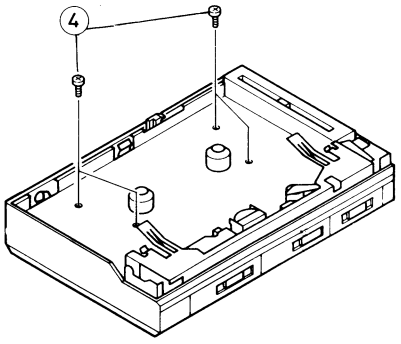


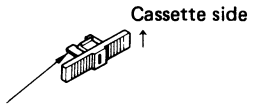
Fig. 2-2

■ Bottom cover

Caution: When removing the screw ⑦, remove the battery and the adaptor beforehand for avoiding short-circuit between plus (+) and minus (—) circuits.

1. Remove the cassette cover.
2. Remove the ornamental inner lay.
3. Remove three slide knobs (REVERSE MODE, DOLBY NR and MIC).

Note: How to re-assemble the knob:



4. Remove the six screws ⑤, ⑥, ⑦ securing the bottom cover.
5. Remove the screw ⑧ from the bottom.
6. Extend the eject lever outwards and remove it. At this time the fitting which is set with the screw ⑤ is comes off.

When the eject button is not removed, extend the bottom cover to remove it.

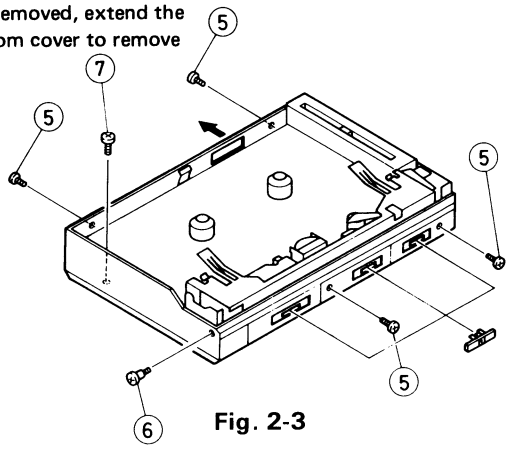


Fig. 2-3

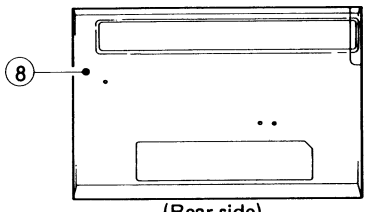


Fig. 2-4

By removing the screw ⑥, the bracket can be removed.

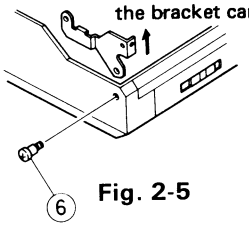
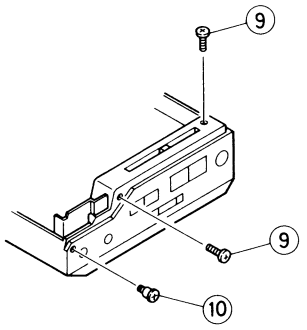


Fig. 2-5

■ Operation panel

1. Remove the band select slide knob.
2. Remove the three screws ⑨ and ⑩ securing the operation panel.
3. Remove the push button as it is pressed.
   - At this time, the RADIO ON button comes off.
   - The screw ⑩ is set together with the bracket.

   (The longer end of the knob should be set in the direction of the cassette cover.)



The bracket can be removed.

Fig. 2-6

■ Dial indicator

Remove the two screws ⑪ securing the cover.

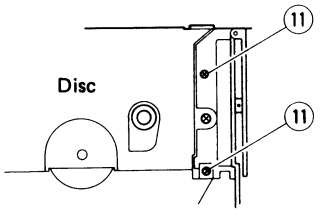


Fig. 2-7

■ Operation P.C. Board Ass'y

1. Remove the two screws ⑫ .
2. Then, the safety lock button can be removed.

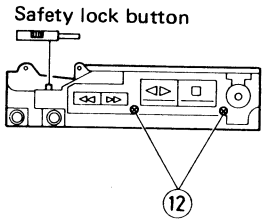


Fig. 2-8

■ Main P.C. Board

1. Remove the five screws ⑬ and ⑭ securing the main P.C. board ass'y.
2. Take off the spacer for arranging wires.

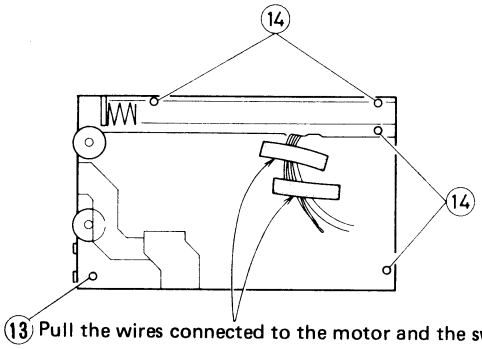


Fig. 2-9

■ Governor P.C. board

Remove the four screws ⑮ and ⑯ .

- How to re-assemble Governor P.C. Board

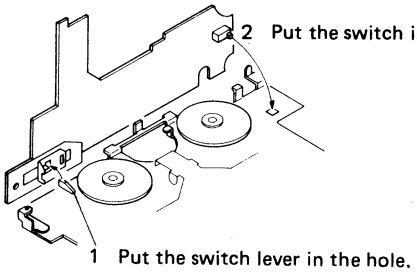


Fig. 2-11

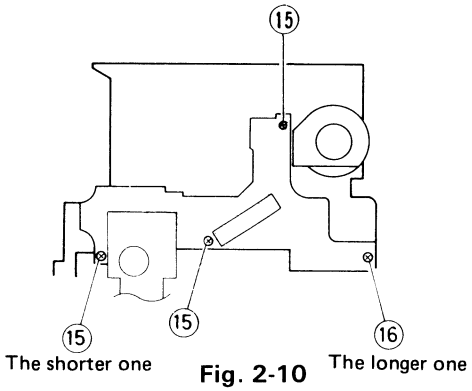


Fig. 2-10

■ Stabilizer (cassette spring)

Remove the four screws ②.

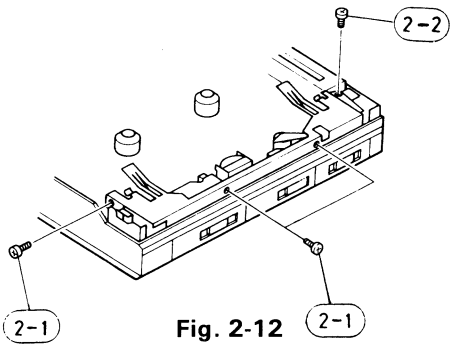


Fig. 2-12

■ Eject button

1. Remove the two screws ③.
2. Then, the spring inside the button comes off.
3. For re-assembling, refer to the figure on the right hand.

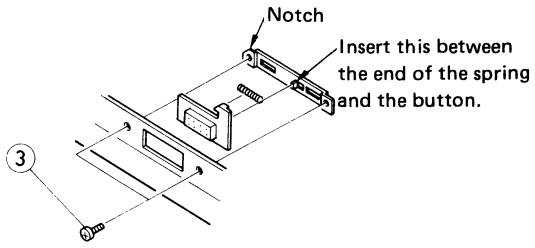


Fig. 2-13

■ Wire arrangement

1. For arranging the wires of the actuator motor, bundle and twist them, and place them under the governor P.C. board not to touch the flywheel.
2. Wires of the capstan motor and the REC safety switch must be arranged by twisting them respectively and place them on the pattern side of the main P.C. board along the edge of the board.

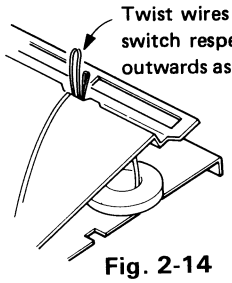
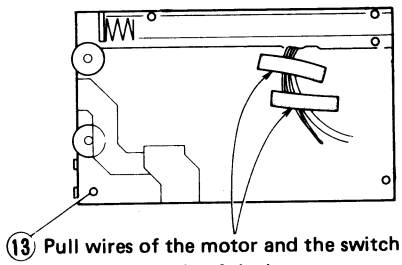


Fig. 2-14



(13) Pull wires of the motor and the switch outwards through the hole of the battery compartment. Fix the wires on the board after arranging them.

Fig. 2-15

■ How to set the dial indicator

1. Turn the dial in the direction of low frequency.
2. Set the gear's concave mark (O mark - depression part) and the right end of the indicator gear each other. Check that the left end of the indicator gear is set well with the chassis edge.

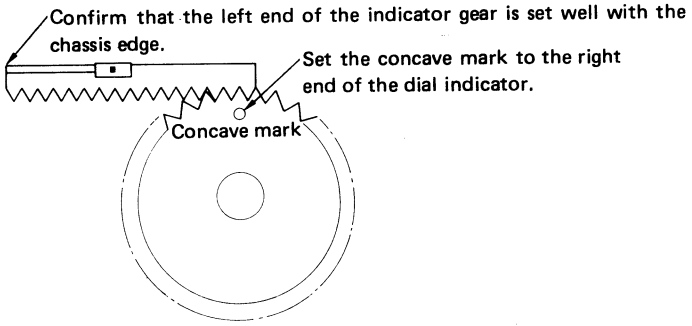


Fig. 2-16

■ Mechanism ass'y

1. Disconnect wires connecting the main board to the head board and the actuator motor from the main board.
2. Disconnect wires connecting the governor board to the capstan motor and the main board from the governor board.

■ Reel unit ass'y

Remove three screws (20) and (21) securing the mechanism ass'y. Then, disengage the elevator's gear from the main pulley.

■ Sub chassis

Remove a screw (22) securing the sub chassis to the mechanism ass'y, and remove the SC bracket.

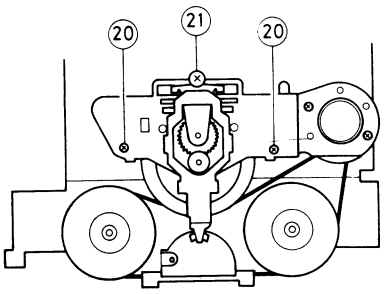


Fig. 2-17

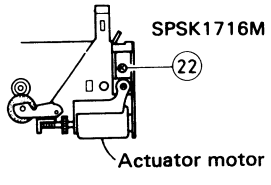


Fig. 2-18

3 Technical Information on Operation Principle

1. Principle of operation

The mechanism control system of this model functions to determine one of six operation modes (1. FWD REC [normal recording], 2. FWD PB [playback in normal direction], 3. FWD FF [fast forward in normal direction], 4. STOP, 5. F. REW [fast rewind], 6. REV PB [playback in reverse direction]) according to settings of the cam's position and the flip-flops inside the IC.

There are four cam positions, viz. [REC] (normal recording), [F] (normal playback), [S] (stop and fast forward), and [R] (reverse playback). Every position determines and sets the gear ratio, necessity of clutch and pinch roller operations. In addition, the switch (S304) synchronizing with the cam determines rotating direction of the capstan motor.

There are two flip-flops which also determine the rotating direction of the capstan motor; one is for ▷▷ (normal direction) and the other for ◁◁ (reverse direction).

Table 1 shows relationship between cam positions and flip-flop settings by operation mode.

By key operation, the mechanism control IC (M51556P) totally controls the operation mode such as to rotate the actuator motor in the normal or reverse direction and to stop it, and to set or reset the flip-flops inside the IC.

Table 1 Relationship between cam positions and flip-flop operation by operation mode

Cam position	Condition of the mechanism	Flip-flop operation	Capstan motor rotation	Operation mode (Symbol)
REC	• Low gear • Clutch operation • E. head set forward • Pinch roller contact		FWD	FWD REC (○ mode)
F				PB (▷ mode)
S	• High gear • No clutch operation • Pinch roller released from contact	▷▷ flip-flop is set.		FF (▷▷ mode)
		Both flip-flops are reset.	STOP	STOP (□ mode)
		◁◁ flip-flop is set.	REV	F. REV (◁◁ mode)
R	• Low gear • Clutch operation • Pinch roller contact			REV PB (◁ mode)

2. Operation of the mechanism control IC (M51556P)

1) Input/Output ports and their functions

Table 2 Output ports

Pin No.	Symbol	Function	Port type	Active value
23	$\overline{\text{C. MOTOR FWD}}$	Rotates the capstan motor in the normal direction.	Open collector	L
24	$\overline{\text{C. MOTOR REV}}$	Rotates the capstan motor in the reverse direction.	"	L
26	FWD LED	Turns on the FWD LED (indicating normal rotation).	"	H
27	REV LED	Turns on the REV LED (indicating reverse rotation).	"	H
28	MUTE	For muting output in the FF mode	"	H
29	$\overline{\text{+B SW}}$	Stops FF operation in the PB mode.	"	L
30	$\overline{\text{CD}}$	Turns on the converter's source power.	"	L
31	$\overline{\text{OP}}$	For muting when the actuator motor is in operation.	"	L
32	$\overline{\text{REV}}$	For switchover of the amplifier's output in REV PB mode	"	L
33	$\overline{\text{A. MOTOR FWD}}$	Rotates the actuator motor in the normal direction.	"	L
34	$\overline{\text{A. MOTOR REV}}$	Rotates the actuator motor in the reverse direction.	"	L

Table 3 Input ports

Pin No.	Symbol	Function	Port type	Active value
4	$\overline{\triangleright\triangleright}$	Command of FF operation (in the normal direction)	See Fig. a.	L
5	$\overline{\square}$	STOP command	"	L
6	$\overline{\triangleleft\triangleleft}$	Command of F. REV operation	"	L
8	$\overline{\text{DIREC}}$	Command of PB and REV PB operations	"	L
9	$\overline{\text{FWD}}$	Rotates the capstan motor in the normal direction. Turns on the FWD LED. Detects normal rotation.	"	L
11 13 14	$\overline{\text{F}}$ $\overline{\text{S}}$ $\overline{\text{R}}$	Detects the mechanism's operating condition.	See Fig. b.	L
12	$\overline{\rightarrow}$	Detects the mechanism's FWD/REV operating condition.	See Fig. c.	L
15	$\overline{\text{REV}}$	Rotates the capstan motor in the reverse direction. Turns on the REV LED.	See Fig. a.	L
16	AUTO STOP TC.	Set AUTO-STOP time.		H
17	AUTO STOP	3-value input port to detect tape travelling Loads pin 16 with Low potential according to L or H input.	See Fig. d.	L/H
19	MODE	Sets for AUTO REV mode. 3-value input port	"	L : ⊂ mode M : ⇄ mode H : ⊂⊃ mode
21	Con.	Power supply terminal for the AUTO-STOP circuit.		
35	BATT. CHECK	Turns on the FWD LED and REV LED ports.		H (Turns on with approx. 1.0 V input)

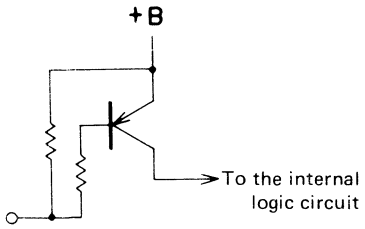


Fig. a Key input ports

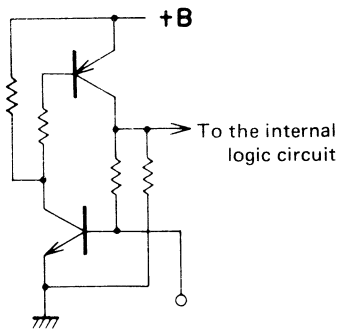


Fig. b Flip-flop's reset input ports

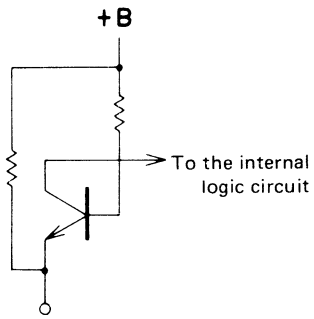


Fig. c FWD/REV position detecting ports

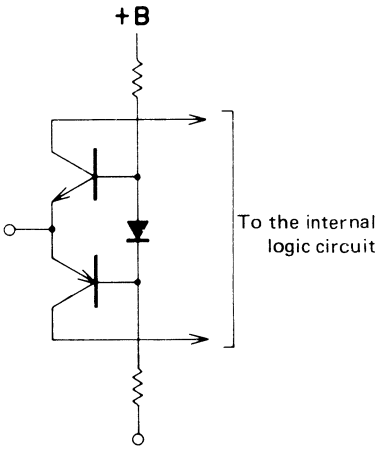


Fig. d 3-value input ports

2. Input keys

(1) $\triangleleft\triangleright$ (PB, REC and REV operation)
(2) $\triangleright\triangleright$ (FF operation)
(3) $\triangleleft\triangleleft$ (F. REW operation)
(4) $\square$ (STOP)
(5) ○ (REC operation together with $\triangleleft\triangleright$ key)

Every key is connected with a corresponding input port ($\overline{\text{DIREC}}$, $\overline{\triangleright\triangleright}$, $\overline{\triangleleft\triangleleft}$, $\overline{\square}$) of the IC, respectively.

3. Operation patterns of cam interlocking switch (S305)

There are seven operation patterns of the cam interlocking switch; viz. $\overline{\text{REV}}$, $\overline{\text{FWD}}$, $\overline{\text{R}}$, $\overline{\text{S}}$, $\overline{\text{F}}$, $\overline{\text{REC}}$, $\overline{\rightarrow}$, and every pattern is connected with a corresponding input port of the IC. (See Table 3.)

When a contact point is engaged for operation, the corresponding active value becomes Low level (see Fig. 1).

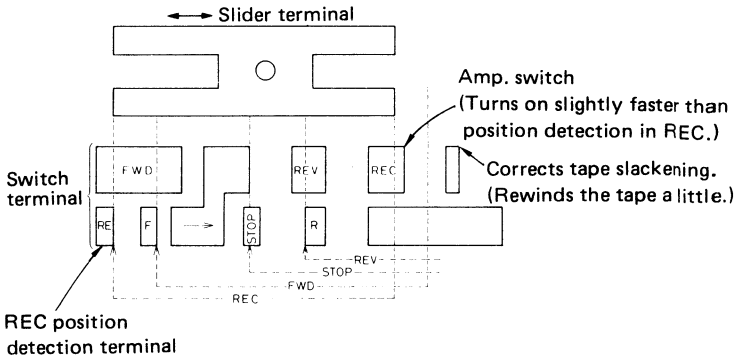


Fig. 3-1 Pattern of the cam interlocking switch (S305)

4) Relating states of I/O ports and capstan motor switch (S305) (See Table 5 below.)

Table 5 State of I/O ports by mode

Mode	Mechanism control IC									
	Input port*1)		Output port*2)							
	FWD	REV	C.MOTOR FWD	C.MOTOR REV	REV	CD	+B	MUTE	FWD LED	REV LED
○	L	H	L	H	H	L	L	L	H	L
▷	L	H	L	H	H	L	L	L	H	L
▷▷	H	H	L	H	H	L	H	H	H	L
□	H	H	H	H	H	H	H	L	L	L
◁◁	H	H	H	L	L	L	H	H	L	H
◁	H	L	H	L	L	L	L	L	L	H

Notes: *1) States of these input ports are determined according to position of the cam's contact point.
*2) The above truth values of FWD LED and REV LED are all "L" when potential at BATT. CHECK input port is "H" and BATT. CHECK level is "L".

5) Other I/O ports

(1) AUTO STOP (pin 17) and AUTO STOP TC (pin 16)
When differential waveform from the photo coupler is supplied to pin 17 (AUTO STOP), pin 16 (AUTO STOP TC) discharges.
When tape travel reaches its end, pin 16 becomes of "M" level and pin 17 becomes "H" at a set time for AUTO STOP operation. At this time, it starts one of three operations (⇄ ⇉ ↬) according to the present mode of the port. (See Table 3.)

(2) $\overline{\text{BATTERY CHECK}}$ (pin 35)
With 1 V (or more) input, it makes the FWD LED and REV LED possible to turn on.

(3) $\overline{\text{OP}}$ (pin 31)
During the actuator motor is in operation, $\overline{\text{OP}}$ is of "L" level to mute amplifier's output.

6) Logical diagram

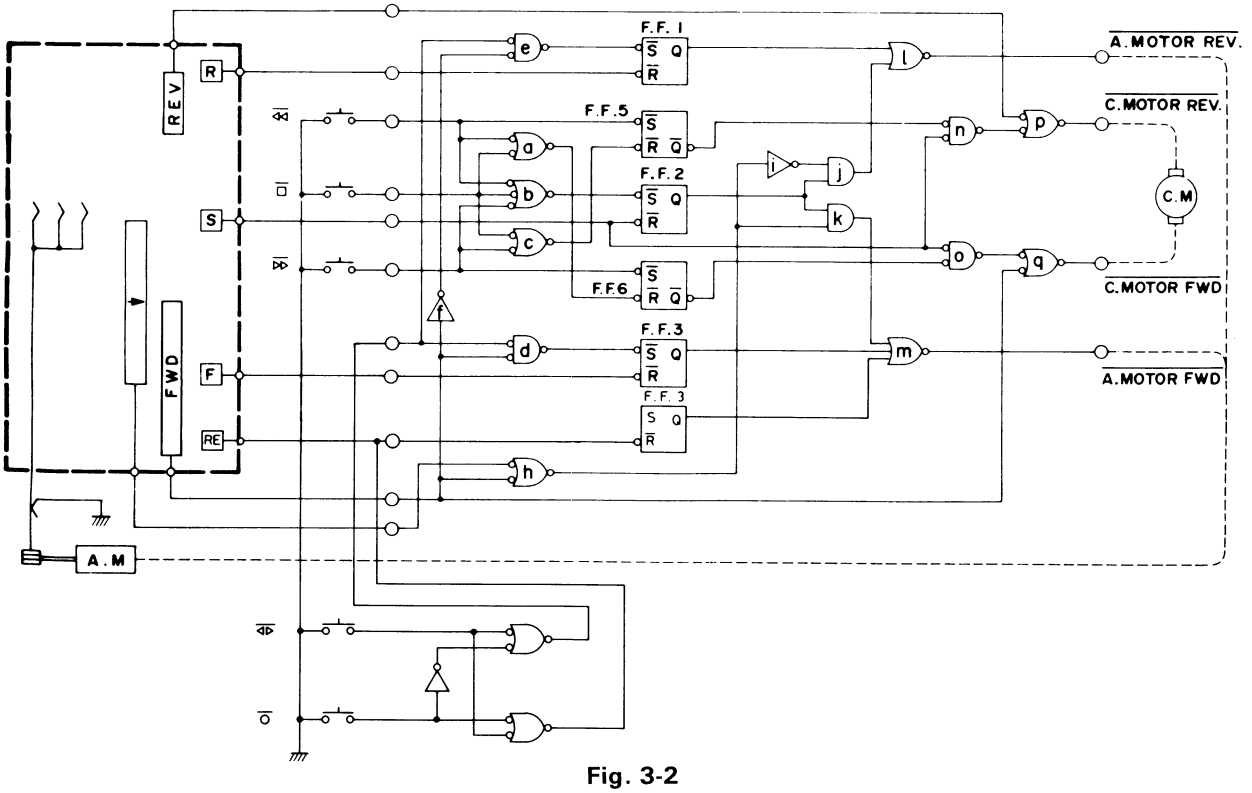
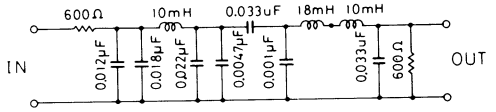


Fig. 3-2

4 Main Adjustment

Conditions Power supply : DC 3.0 V MIC input : −60 dBm
Output : 16 Ω load impedance at both headphone terminals

	Items	Tape to be used	Adjustment procedure	Select switch position	Adjustment points
1.	Head azimuth adjustment	Test tape VTT702 (8 kHz)	Play back the test tape in the FWD and REV modes and adjust the azimuth adj. screw to the mid-point of both peak levels. (Apply screw locking compound after adjustment.)	TAPE 120 μs (Normal)	Azimuth adjusting screw
2.	Tape speed adjustment and wow & flutter check	Test tape VTT712 (3 kHz)	Playing back the test tape for tape speed adjustment, adjust VR302 (accessible through a hole on the bottom cover) so that the counter reads 3000 Hz ± 10 Hz in FWD PLAY mode and 2940−3060 Hz in REW mode. Wow & flutter should be within 0.5% (JIS RMS).	TAPE	VR302 on Governor board Adjustment can be performed externally through the center hole on the bottom.
3.	Playback frequency characteristic check	Test tape VTT736	Playback output level should be as follows with respect to 1 kHz output (30 mV/16 Ω). Normal tape 125 Hz : −2 dB ± 3 dB 8 kHz : 0 ± 3 dB Metal tape 8 kHz : −4 dB ± 3 dB	TAPE 120 μs (Normal) TAPE 70 μs (Metal)	
4.	Playback sensitivity adjustment	Test tape VTT724 (1 kHz)	In FWD and PB (PLAY) modes, adjust output at the PB GAIN TP so that it becomes −22 dB ± 1 dB for both L and R channels. (Output terminal: Pins 6 and 20 of IC302)	TAPE 120 μs (Normal)	
5.	Playback output check	VTT724	Output at the headphone terminals should be 4 mW (0.25 V/16 Ω) at 10% distortion. Level difference between L and R channels should be within 3 dB.	TAPE 120 μs (Normal)	
6.	REC sensitivity	TS-8 (UD)	Record a MIC input of 1 kHz, −60 dB, and play back it to confirm that difference between its level and that of the alignment tape VTT724 is within 0 ± 3 dB. (Output terminal: Headphone terminal)	NR : OFF TAPE 120 μs	
7.	REC/PB frequency characteristic	TS-8 (UD)	With MIC input of −80 dBm record 1 kHz, 150 Hz, and 8 kHz signals, and play back them to confirm that their output levels through the headphone terminal are as follow: 150 Hz : −1 ± 3 dB 8 kHz : 0 ± 3 dB	TAPE 120 μs (Normal) Beat cut: (Standard : 1) NR : OFF	
8.	Dolby effect check	—	With a Dolby effect measuring filter (see below) used, confirm that difference between noise levels at turning on the NR switch and turning it off is more than 8 dB.	TAPE	
		Dolby effect measuring filter			

Governor P.C. Board

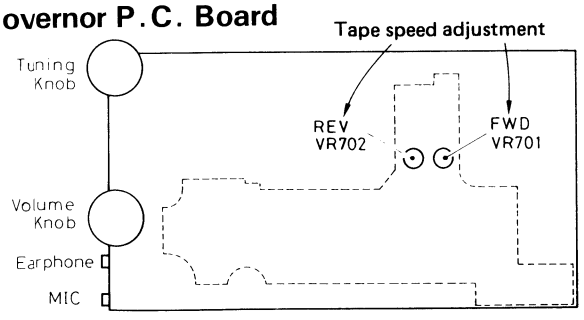
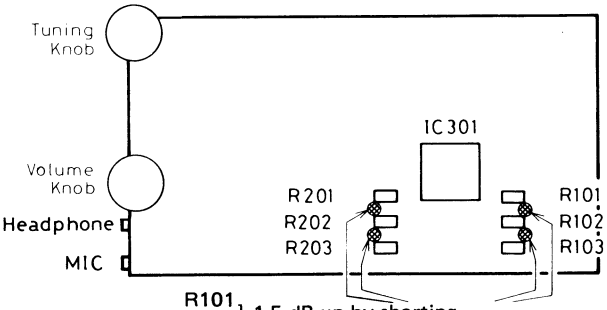


Fig. 4-1

Main P.C. Board



R101, R102] 1.5 dB up by shorting
R103] 2 dB up by shorting
] 3 dB up by shorting all

* The above is the same for R channel.

Fig. 4-2

■ Head azimuth and height adjustment .

After replacement of the head, proceed adjustments in the following order.

1. Check up the head's tinging angle (use M300 gauge). Refer to Fig. 3-3(A).
2. Height adjustment of the head and the tape guide (use M300 gauge). Refer to Fig. 3-3(B).
   After checking up the tape guide height at its right and left ends, adjust the heights of the both ends by turning the screws Ⓐ and Ⓑ .
3. Head azimuth adjustment (use the alignment tape VTT-702 [8 kHz segment]).
   1) In FWD mode, adjust the azimuth screw Ⓐ to obtain the maximum output.
   2) With the tape travelling in REV PB mode, adjust the head height adjusting screw Ⓑ to obtain the peak level. (At this time, make sure not to turn the screw over 180°.) Difference between the peak levels in FWD and REV modes should be within 4 dB.
   3) With the tape travelling in FWD mode again, adjust the azimuth adjusting screw Ⓐ to set for the peak level.
   4) Repeat tape travelling in REV mode, check the peak level again.
   5) After completion of the above procedures, lock the screws Ⓐ and Ⓑ with screw locking bond, etc.
4. In the step 3.-2) above, if the difference exceeds 4 dB, perform the following adjustment.
   1) In REV mode, turn the head height adjustment screw Ⓑ by 180° in the contrary direction to the peak.
   2) Repeat the adjustment of 3.-3) above.

- **Final fine adjustment**

Fine adjustment can be performed by turning the screw through a hole located on the right top of the FF button on the cover.

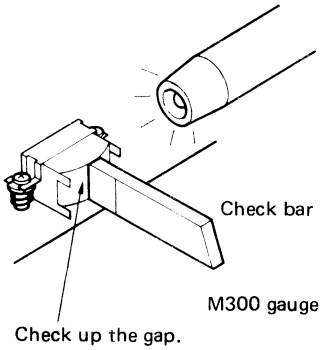


Fig. 4-3 (A) Checkup of head tilting angle

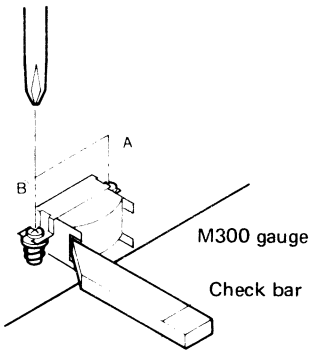


Fig. 4-3 (B) Checkup of tape guide height

Adjustment Points of Tuner Section

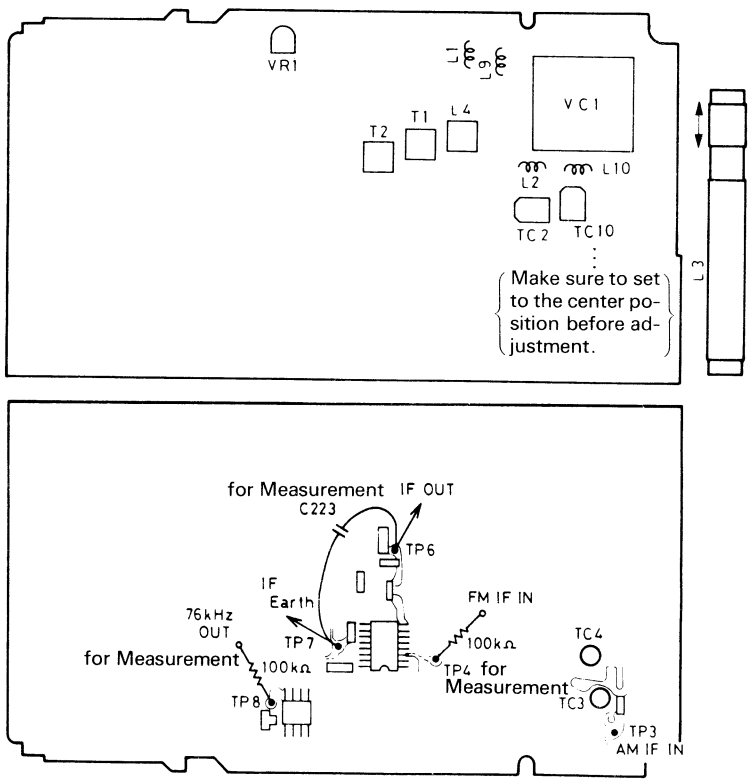


Fig. 4-4

■ Adjustment of tuner section

Conditions Power supply : DC 3 V Function switch : Set to RADIO Mode switch : Stereo
Volume control : Set to the maximum position except for IF adjustment (IF - at the minimum position)
Output measurement point: Headphones (output level of 40 mV/16 Ω)
Input signal : AM : Modulation frequency 400 Hz, Modulation degree : 30%
FM : Modulation frequency 400 Hz, Frequency deviation : 22.5 kHz (30%)

■ Tuning voltage adjustment

Connect a voltmeter to the governor board. With the tuning volume VR2 turned fully clockwise (Lowest position), adjust VR3 so that voltage between TP8 and TP2 (GND, minus side of an electrolytic capacitor) becomes 1.5 V ± 0.1 V.

■ AM IF adjustment

Band select switch : Set to AM position.
Position of VC1 : Near minimum capacitor position with no input signal.
Input : From TP3 terminal Output : From TP6 Ground : TP7

Input signal	Adjustment points	Output measurement points	Adjustment procedure
From OUT terminal of IF sweep generator (450 kHz). (Connect 30 pF capacitance & 33 kΩ resistance in series.)	T1	Connect TP6 (hot side) and TP7 (GND side) to the sweep generator's IN terminal. (Connect 0.08 μF capacitance and 100 kΩ resistance in series.)	With maximum output, adjust T1 to to obtain symmetrical waveforms for L and R channels.

■ AM RF adjustment

Input : Via standard loop antenna; SSG modulation output : 400 Hz, 30%.

No.	Input frequency	Adjustment points	Position of VC1	Adjustment procedure
1	520 kHz	L4	Maximum capacitor	Tune in a required frequency.
2	1650 kHz	TC4	Minimum capacitor	
3	Perform adjustments by repeating the above items (No. 1 and 2).			
4	600 kHz	L3	Adjust for 600 kHz signal reception.	Set for maximum output.
5	1400 kHz	TC3	Adjust for 1400 kHz signal reception.	
6	Perform adjustments by repeating the above items (No. 4 and 5).			

■ FM IF adjustment

Band select switch : FM position
Position of VC1 : Near the minimum capacitor position with no input signal.
Input : TP4 Output : TP6 Ground : TP7

Input signal	Adjustment points	Output measurement points	Adjustment procedure
From OUT terminal of IF sweep generator (10.7 MHz).	DISC: T2	Connect IF OUT terminal to the sweep generator's IN terminal.	Turn T2 to make symmetrical S-curved waveforms for R and L channels and adjust for the maximum.

Note: Ceramic filter's center frequencies: Black 10.64 MHz, Blue 10.67 MHz, Red 10.7 MHz, Orange 10.73 MHz, White 10.76 MHz

■ FM RF and MPX adjustments

Input : Via rod antenna (TP1) with GND (TP5) Band select switch : FM position
FM SSG output : 400 Hz, 30% (22.5 kHz deviation) FM mode : STEREO
Output impedance : 75 Ω unbalanced

No.	Input frequency	Adjustment points	Position of VC1	Adjustment procedure
1	87.5 MHz	L2	Maximum capacitor	Tune in a required frequency. (FM position)
2	106.0 MHz	TC2	Minimum capacitor	
3	Perform adjustments by repeating the above items (No. 1 and 2).			
4	90.0 MHz	L1	For 90 MHz signal reception.	Set for the maximum output.
FM, MPX	98 MHz, 60 dB (Monaural)	VR1		Adjust VR1 to tune in 76 kHz ± 100 Hz. Connect a frequency counter to TP 8 and TP 7 (GND).

5 Standard Schematic Diagrams

Tuner Section

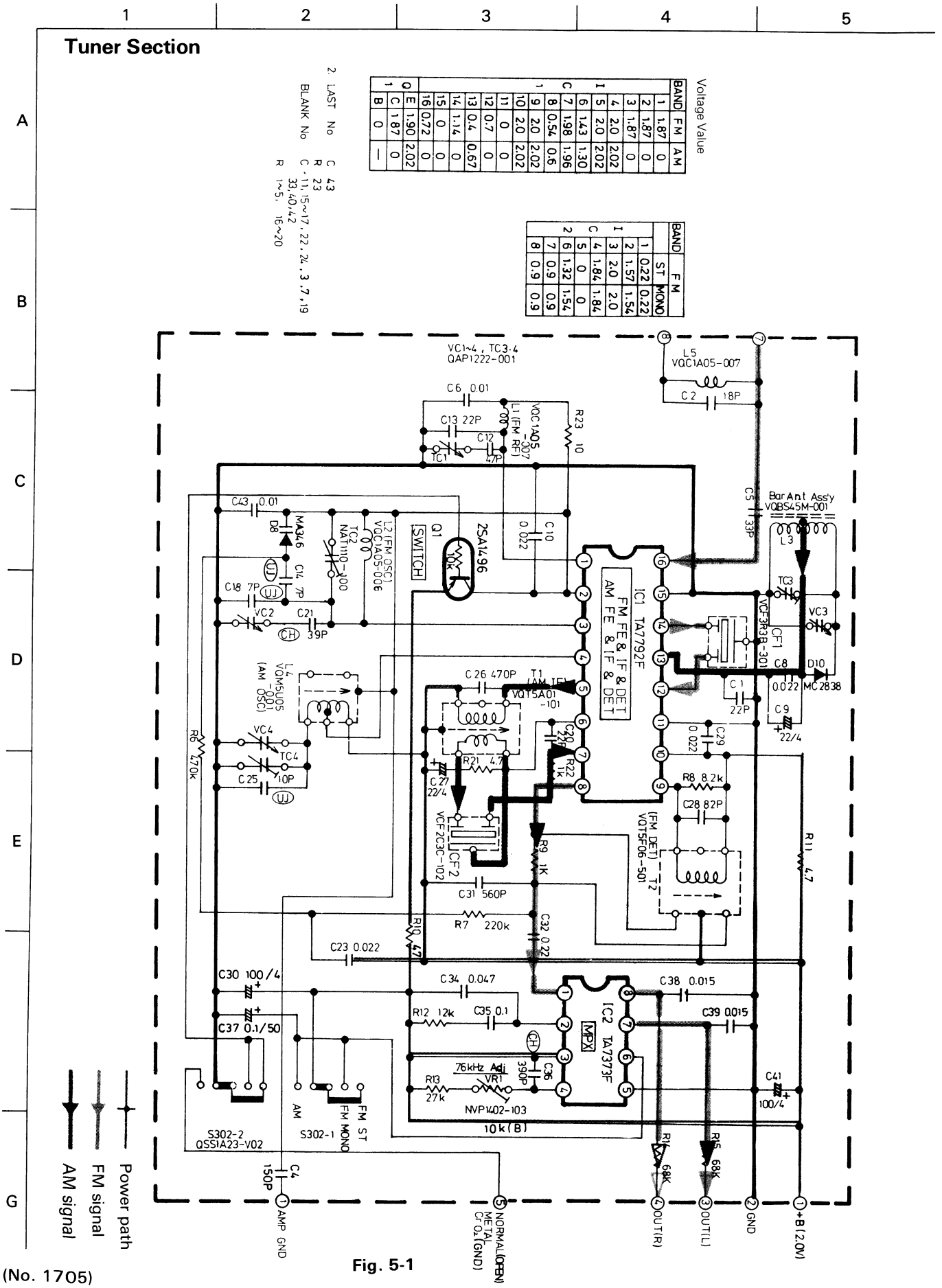
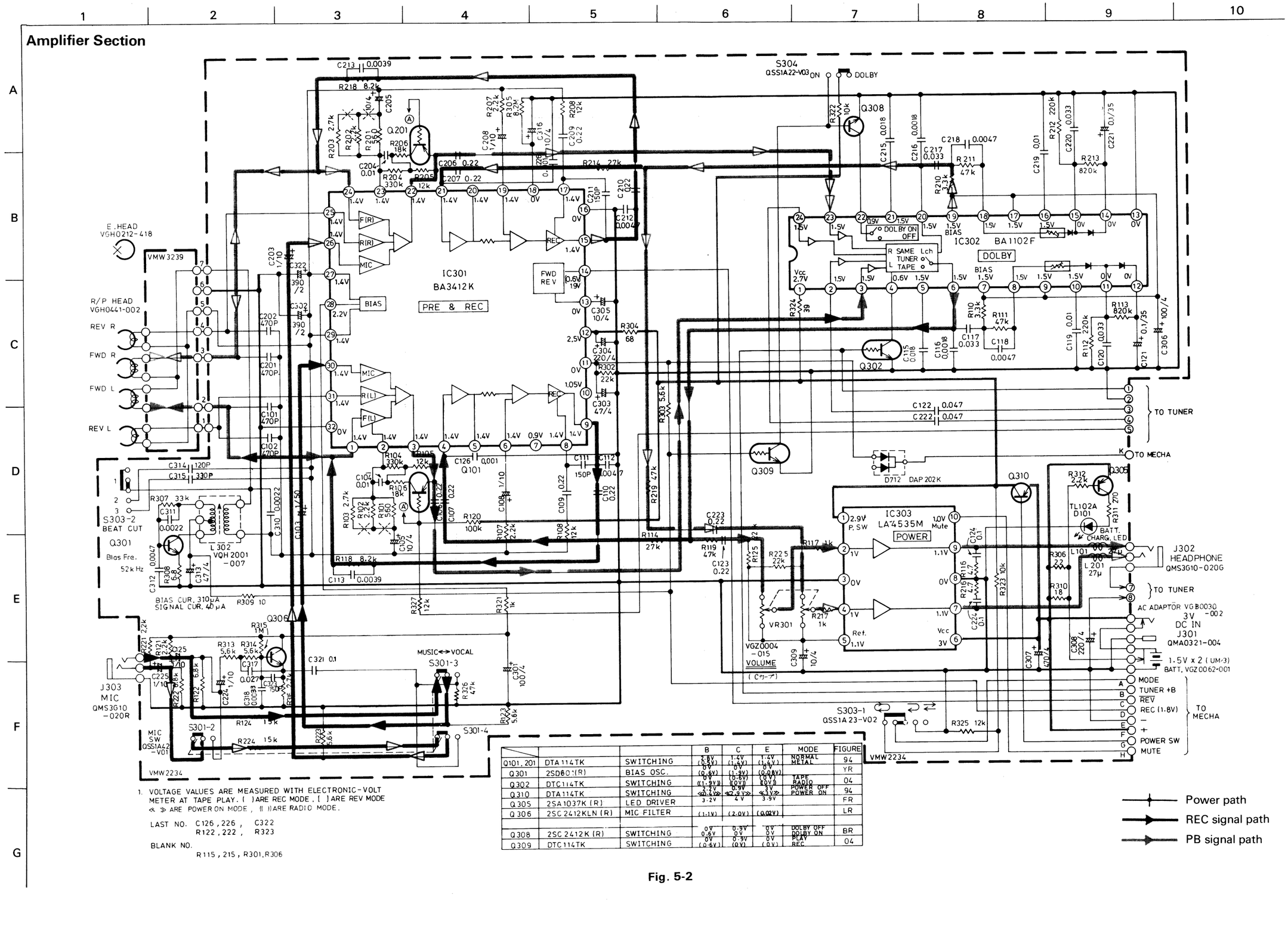


Fig. 5-1

Amplifier Section



			B	C	E	MODE	FIGURE
Q101, 201	DTA114TK	SWITCHING	0.8V (0.6V)	1.4V (1.4V)	1.4V (1.4V)	NORMAL METAL	94
Q301	2SD601(R)	BIAS OSC.	0V (0.6V)	0V (1.9V)	0V (0.08V)		YR
Q302	DTC114TK	SWITCHING	0V ((1.9V))	0V (0.6V) ((0V))	0V ((0V))	TAPE RADIO	04
Q310	DTA114TK	SWITCHING	2.1V «0.6V»	0.9V «2.9V»	3V «3V»	POWER OFF POWER ON	94
Q305	2SA1037K (R)	LED DRIVER	3.2V	4V	3.9V		FR
Q306	2SC2412KLN (R)	MIC FILTER	(1.1V)	(2.0V)	(0.02V)		LR
Q308	2SC2412K (R)	SWITCHING	0V 0.6V	0.9V 0V	0V 0V	DOLBY OFF DOLBY ON	BR
Q309	DTC114TK	SWITCHING	0V (0.6V)	0.9V (0V)	3V (0V)	PLAY REC	04

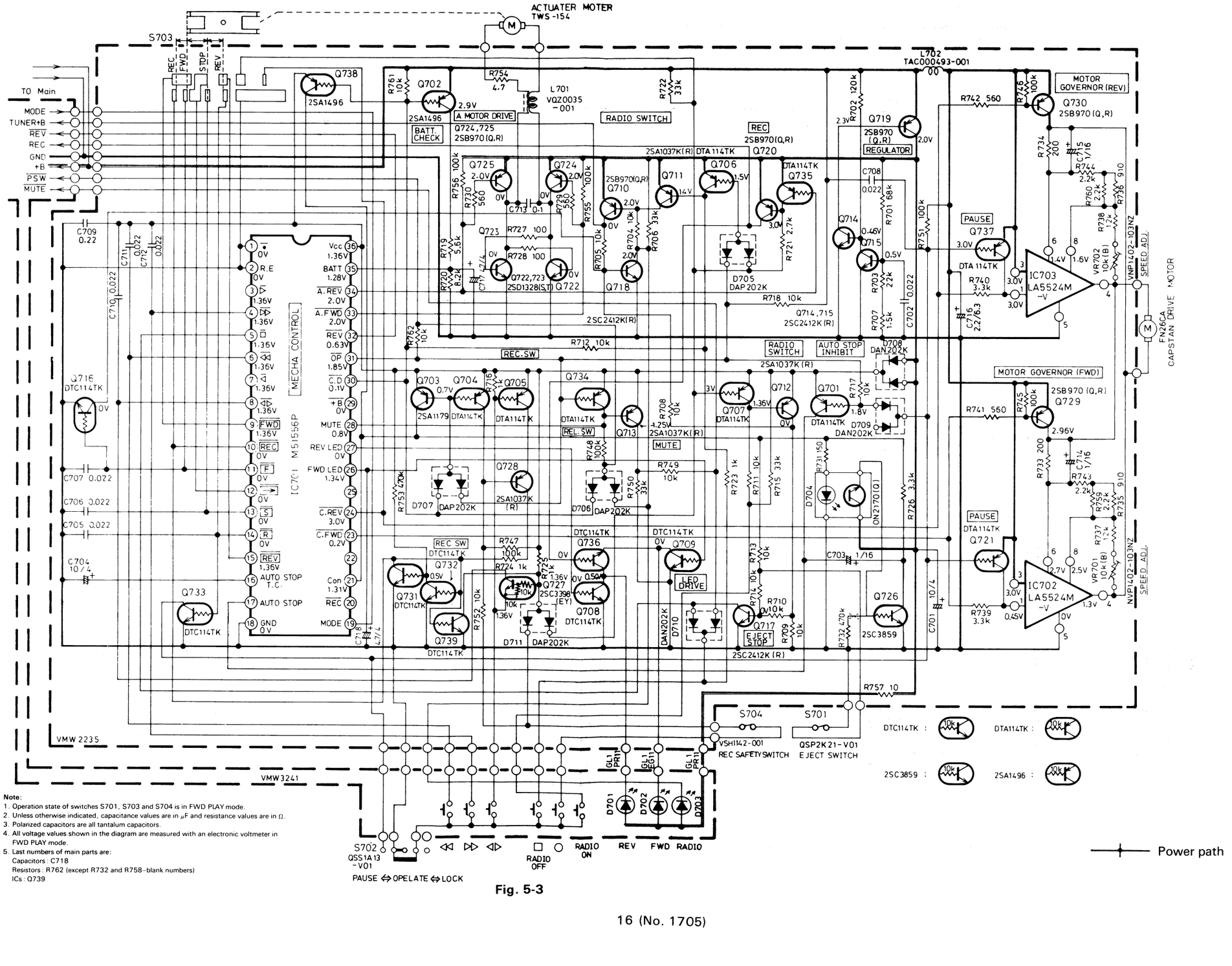
1. VOLTAGE VALUES ARE MEASURED WITH ELECTRONIC-VOLT METER AT TAPE PLAY. ( ) ARE REC MODE. [ ] ARE REV MODE
« » ARE POWER ON MODE, (( )) ARE RADIO MODE.

LAST NO. C126, 226, C322
R122, 222, R323

BLANK NO.
R115, 215, R301, R306

Fig. 5-2

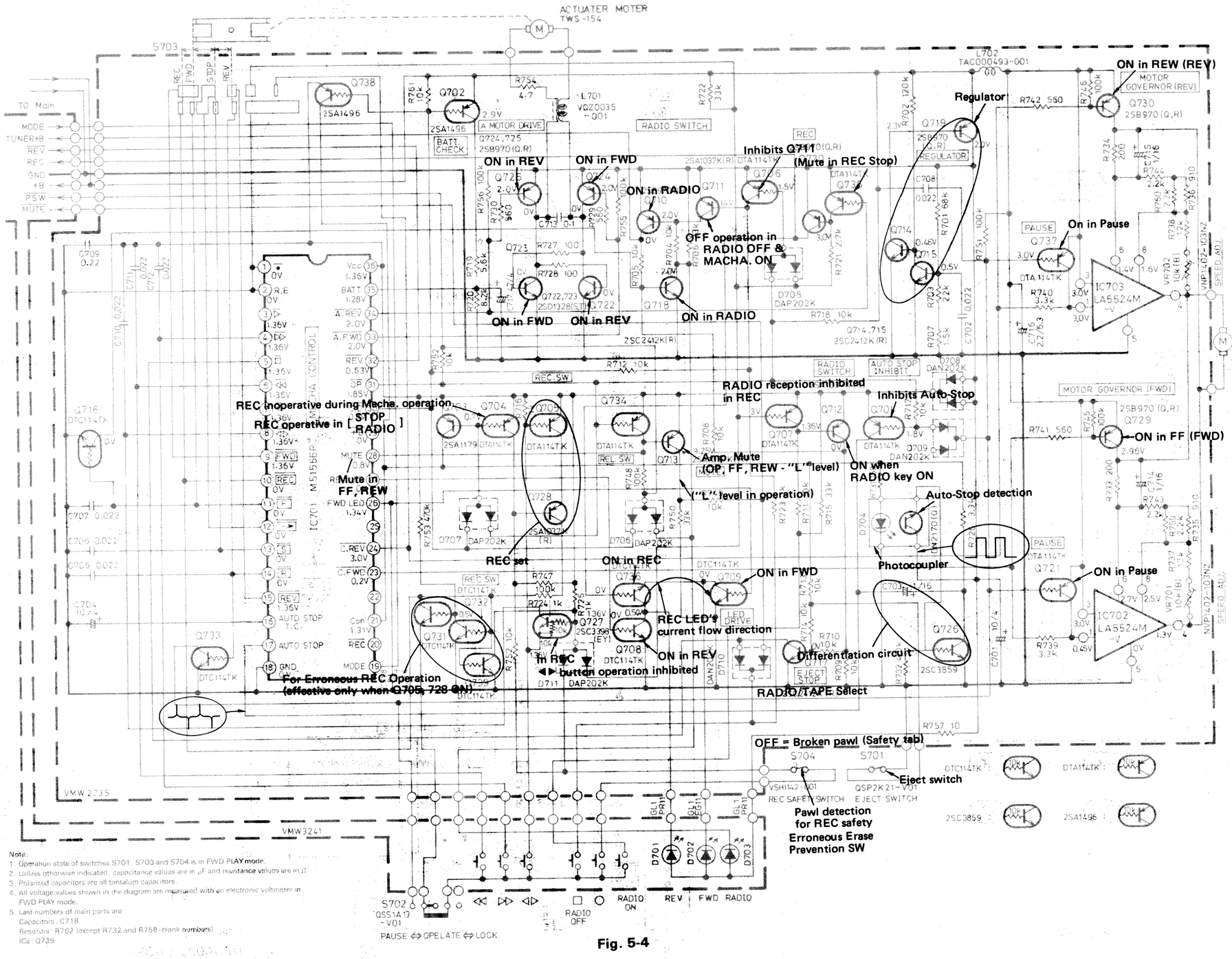
Control Section



Note:
1. Operation state of switches S701, S703 and S704 is in FWD PLAY mode.
2. Unless otherwise indicated, capacitance values are in μF and resistance values are in Ω.
3. Polarized capacitors are all tantalum capacitors.
4. All voltage values shown in the diagram are measured with an electronic voltmeter in FWD PLAY mode.
5. Last numbers of main parts are:
   Capacitors : C718
   Resistors : R762 (except R732 and R758-blank numbers)
   ICs : Q739

Fig. 5-3

Circuit Explanation



Note:
1. Operation state of switches S701, S703 and S704 is in FWD PLAY mode.
2. Unless otherwise indicated, capacitance values are in μF and resistance values are in Ω.
3. Polarized capacitors are all tantalum capacitors.
4. All voltage values shown in the diagram are measured with an electronic voltmeter in FWD PLAY mode.
5. Last numbers of main parts are:
   Capacitors : C718
   Resistors : R762 (except R732 and R758 - blank numbers)
   ICs : Q739

Fig. 5-4

6 P.C. Board Diagrams and Parts List

Motor Control Circuit (#1～#6000)

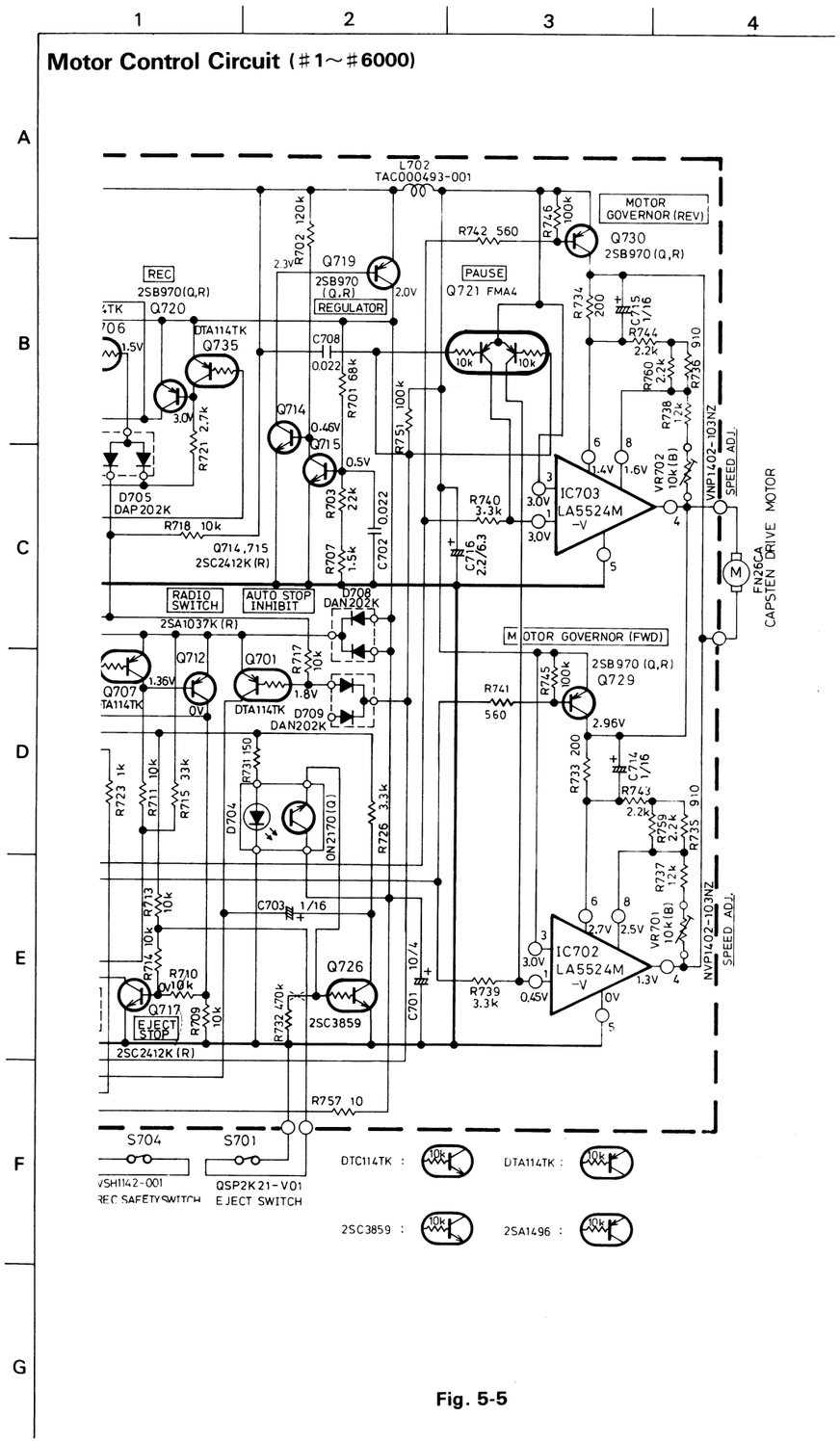
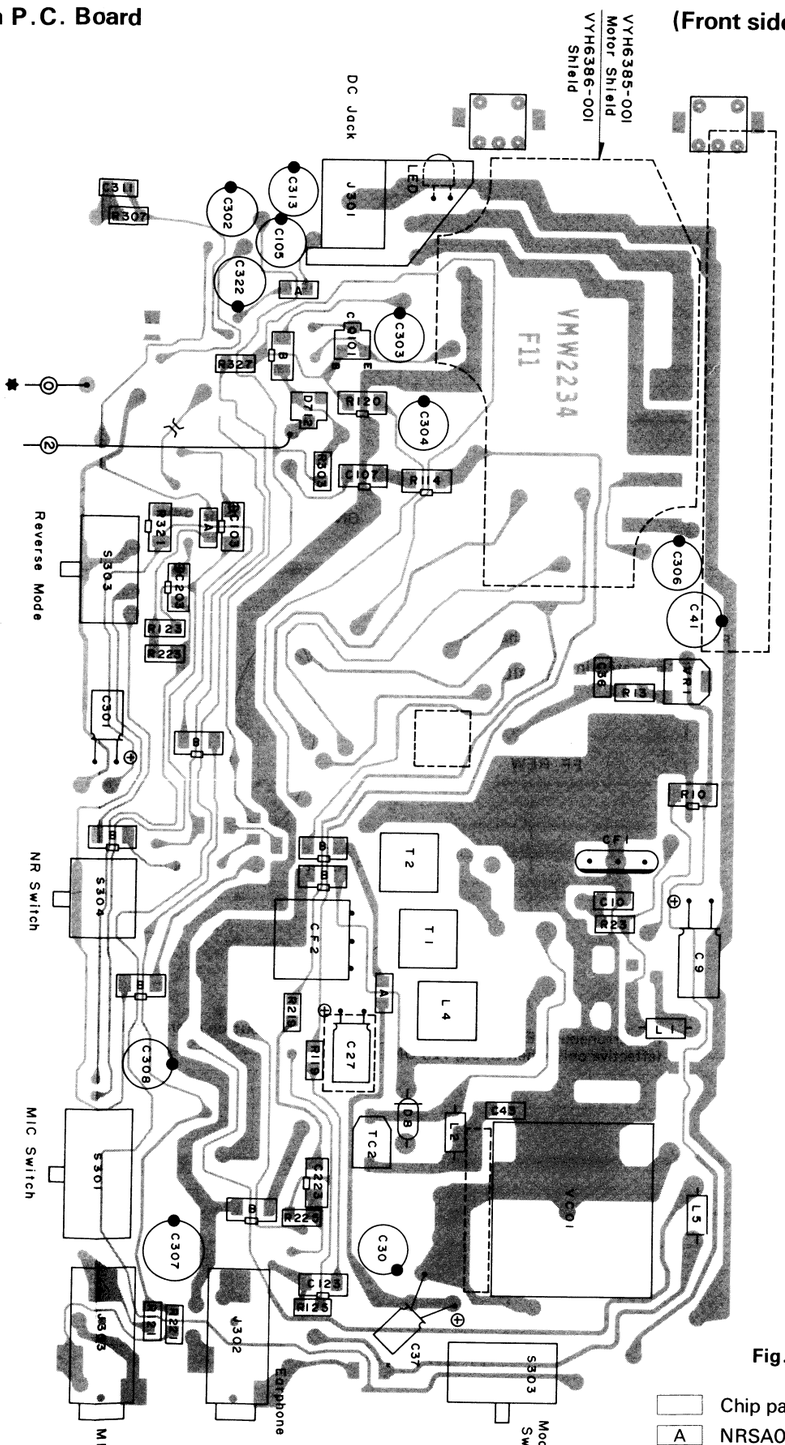
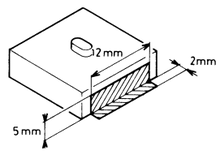


Fig. 5-5

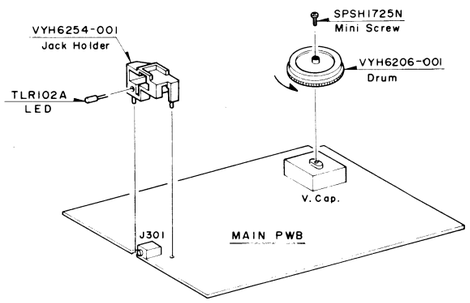
Main P.C. Board (Front side)





VMW2234-F11

VC1



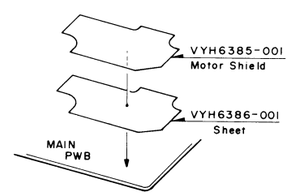


Fig. 6-1

Chip parts
A NRSA02J-ORONY
B NRS181J-ORONY

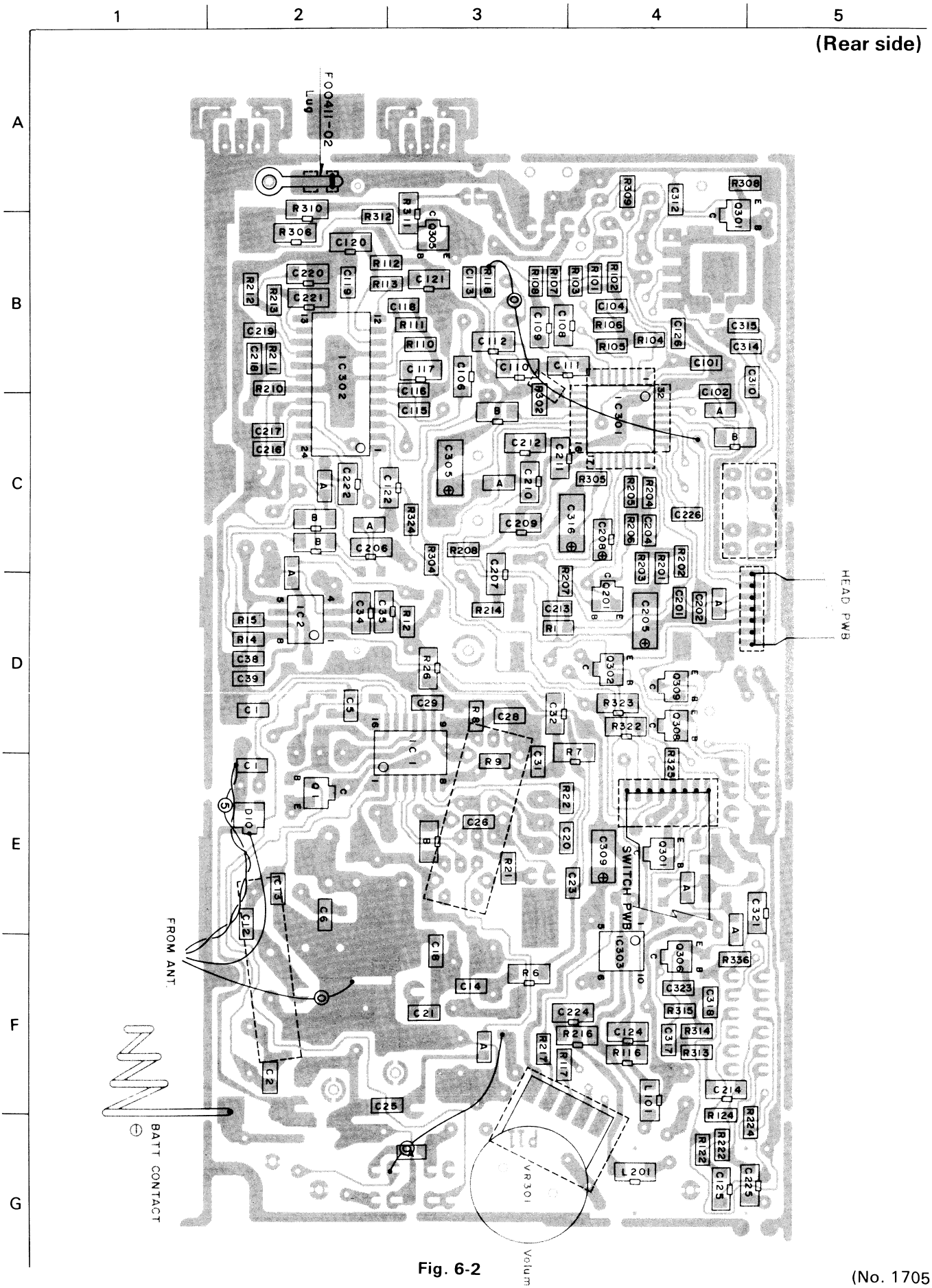

1
2
3
4
5
A
B
C
D
E
F
G
(Rear side)
F00411-02
Lug
IC302
IC301
IC2
IC1
IC303
VR301
Volume
SWITCH PWB
HEAD PWB
FROM ANT.
BATT CONTACT

Fig. 6-2

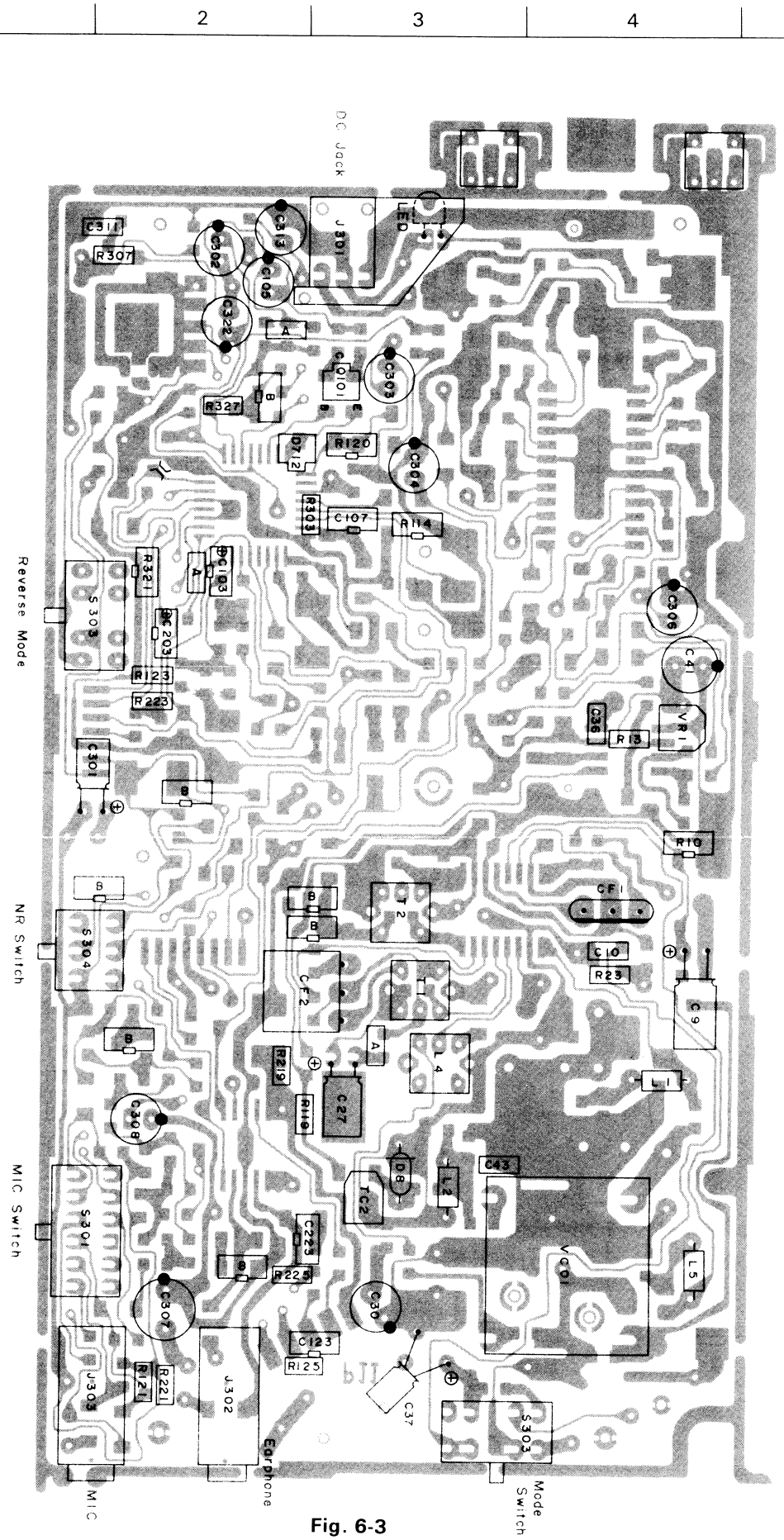

1
2
3
4
5
A
B
C
D
E
F
G
DC Jack
J301
LED
C311
R307
C302
C313
C105
C322
C303
R327
C101
R120
C304
C107
R114
R321
C103
S303
CF203
R123
R223
C301
C306
C41
C36
R13
VR1
R10
CF1
C10
R23
C9
S304
CF2
T2
T1
L4
R219
C27
R119
C308
S301
D8
TC2
L2
C43
VCO1
L5
C223
R225
C307
C30
C123
R125
C37
J303
R121
R221
J302
S302
MIC
Earphone
Mode Switch
Reverse Mode
NR Switch
MIC Switch

Fig. 6-3

Main P.C. Board Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME
	CF1	VCF3R3B-301	C FILTER
	CF2	VCF2C3C-102	C FILTER
	C001	NCS21HJ-220AY	C CAPACITOR
	C002	NCS21HJ-180AY	C CAPACITOR
	C004	QCS81HK-151Y	C CAPACITOR
	C005	NCS21HJ-330AY	C CAPACITOR
	C006	NCB21EK-103AY	C CAPACITOR
	C008	NCB21EK-223AY	C CAPACITOR
	C009	QER40GM-226M	E CAPACITOR
	C010	NCB21EK-223AY	C CAPACITOR
	C012	NCS21HJ-470AY	C CAPACITOR
	C013	NCS21HJ-220AY	C CAPACITOR
	C014	NCT21UJ-7R0AY	C CAPACITOR
	C018	NCT21UJ-7R0AY	C CAPACITOR
	C020	NCS21HJ-220AY	C CAPACITOR
	C021	NCT21CH-390AY	C CAPACITOR
	C023	NCB21EK-223AY	C CAPACITOR
	C025	NCT21UJ-100AY	C CAPACITOR
	C026	NCS21HJ-471AY	C.CAPACITOR
	C027	QER40GM-226M	E CAPACITOR
	C028	NCS21HJ-820AY	C CAPACITOR
	C029	NCB21EK-223AY	C CAPACITOR
	C030	QER40GM-107VM	E CAPACITOR
	C031	NCS21HJ-561AY	C CAPACITOR
	C032	QCF81EZ-224Y	C CAPACITOR
	C034	QCY81EK-473Y	C CAPACITOR
	C035	QCF81HZ-104Y	C.CAPACITOR
	C036	NCT21CH-391AY	C CAPACITOR
	C037	QER41HM-104M	E CAPACITOR
	C038	NCB21EK-153AY	C.CAPACITOR
	C039	NCB21EK-153AY	C.CAPACITOR
	C041	QER40GM-107VM	E CAPACITOR
	C043	NCB21EK-103AY	C CAPACITOR
	C050	NCS21HJ-151AY	C CAPACITOR
	C101	NCS21HJ-471AY	C.CAPACITOR
	C102	NCS21HJ-471AY	C.CAPACITOR
	C103	NEF11AM-105RY	TS E CAPACITOR
	C104	NCB21EK-103AY	C CAPACITOR
	C105	QER41CM-106VM	E.CAPACITOR
	C106	QCF81EZ-224Y	C CAPACITOR
	C107	QCF81EZ-224Y	C CAPACITOR
	C108	NEF11AM-105RY	TS E CAPACITOR
	C109	QCF81HZ-104Y	C.CAPACITOR
	C110	QCF81EZ-224Y	C CAPACITOR
	C111	QCS81HK-151Y	C CAPACITOR
	C112	QCY81HK-472Y	C.CAPACITOR
	C113	NCB21HK-392AY	C CAPACITOR
	C115	NCB21EK-183AY	C CAPACITOR
	C116	NCB21HK-182AY	C CAPACITOR
	C117	QCY81EK-333Y	C.CAPACITOR
	C118	NCB21HK-472AY	C.CAPACITOR
	C119	NCB21HK-103AY	C CAPACITOR
	C120	QCY81EK-333Y	C.CAPACITOR
	C121	NEF11VM-104RY	TS E CAPACITOR
	C122	QCY81EK-473Y	C CAPACITOR
	C123	QCF81EZ-224Y	C CAPACITOR
	C124	QCF81HZ-104Y	C.CAPACITOR
	C125	QCF81EZ-224Y	C CAPACITOR
	C126	NCB21HK-102AY	C.CAPACITOR
	C201	NCS21HJ-471AY	C.CAPACITOR

⚠	REF. NO	PARTS NO.	PARTS NAME
	C202	NCS21HJ-471AY	C.CAPACITOR
	C203	NEF11AM-105RY	TS E CAPACITOR
	C204	NCB21EK-103AY	C CAPACITOR
	C205	QEF80GM-106LB	TS E CAPACITOR
	C206	QCF81EZ-224Y	C CAPACITOR
	C207	QCF81EZ-224Y	C CAPACITOR
	C208	NEF11AM-105RY	TS E CAPACITOR
	C209	QCF81HZ-104Y	C.CAPACITOR
	C210	QCF81EZ-224Y	C CAPACITOR
	C211	QCS81HK-151Y	C CAPACITOR
	C212	QCY81HK-472Y	C.CAPACITOR
	C213	NCB21HK-392AY	C CAPACITOR
	C214	QCF81EZ-224Y	C CAPACITOR
	C215	NCB21EK-183AY	C CAPACITOR
	C216	NCB21HK-182AY	C CAPACITOR
	C217	QCY81EK-333Y	C.CAPACITOR
	C218	NCB21HK-472AY	C.CAPACITOR
	C219	NCB21HK-103AY	C CAPACITOR
	C220	QCY81EK-333Y	C.CAPACITOR
	C221	NEF11VM-104RY	TS E CAPACITOR
	C222	QCY81EK-473Y	C CAPACITOR
	C223	QCF81EZ-224Y	C CAPACITOR
	C224	QCF81HZ-104Y	C.CAPACITOR
	C225	QCF81EZ-224Y	C CAPACITOR
	C226	NCB21HK-102AY	C.CAPACITOR
	C301	QER40GM-107M	E CAPACITOR
	C302	QEK40DR-397M	E CAPACITOR
	C303	QER40GM-476VM	E CAPACITOR
	C304	QER40GM-227VM	E CAPACITOR
	C305	QEF80GM-106LB	TS E CAPACITOR
	C306	QER40GM-107VM	E CAPACITOR
	C307	QEK40GM-477M	E CAPACITOR
	C308	QER40GM-227VM	E CAPACITOR
	C309	QEF80GM-106LB	TS E CAPACITOR
	C310	NCB21HK-222AY	C CAPACITOR
	C311	NCB21HK-222AY	C CAPACITOR
	C312	NCB21EK-472AY	C CAPACITOR
	C313	QER40GM-476VM	E CAPACITOR
	C314	NCS21HJ-121AY	C CAPACITOR
	C315	NCS21HJ-331AY	C CAPACITOR
	C316	QEF80GM-106LB	TS E CAPACITOR
	C317	NCB21EK-273AY	C CAPACITOR
	C318	NCB21HK-332AY	C.CAPACITOR
	C321	QCF81HZ-104Y	C.CAPACITOR
	C322	QEK40DR-397M	E CAPACITOR
	C323	NCS21HJ-151AY	C CAPACITOR
	D008	MA346	V DIODE
	D010	MC2838X	DIODE
	D101	TLR102A	LED
	D712	DAN202KT96	DIODE
	IC01	TA7792F-T1	IC
	IC02	TA7373F-T1	IC
	IC301	BA3412K	IC
	IC302	BA1102F-T1	I C
	IC303	LA4533M-T1	IC
	J301	QMA0321-004	DC JACK
	J302	QMS3G10-020G	JACK
	J303	QMS3G10-020R	JACK
	L001	VQC1A05-007	COIL
	L002	VQC1A05-006	COIL

⚠	REF. NO	PARTS NO.	PARTS NAME
	L003	VQBS45M-001	BAR ANTENA
	L004	VQM5U05-001	OSC COIL(MW)
	L005	VQC1A05-007	COIL
	L101	VQP1003-270Y	INDUCTOR
	L201	VQP1003-270Y	INDUCTOR
	L302	VQH2001-008	OSC COIL(BIAS)
	Q001	2SA1496-TB	TRANSISTOR
	Q101	DTA114TKT96	TRANSISTOR
	Q201	DTA114TKT96	TRANSISTOR
	Q301	2SD601(R)X	TRANSISTOR
	Q302	DTC114TKT96	TRANSISTOR
	Q305	2SA1037K(R)T96	TRANSISTOR
	Q306	2SC2412KLN,RT96	TRANSISTOR
	Q308	2SC2412K(R)T96	TRANSISTOR
	Q309	DTC114TKT96	TRANSISTOR
	Q310	DTA114TKT96	TRANSISTOR
	R006	NRS181J-474NY	MG RESISTOR
	R007	NRS181J-224NY	MG RESISTOR
	R008	NRSA02J-822NY	MG REAIATOR
	R009	NRSA02J-102NY	MG RESISTOR
	R010	NRS181J-470NY	MG RESISTOR
	R011	NRS181J-4R7NY	MG RESISTOR
	R012	NRSA02J-123NY	MG RESISTOR
	R013	NRSA02J-273NY	MG RESISTOR
	R014	NRSA02J-683NY	MG RESISTOR
	R015	NRSA02J-683NY	MG RESISTOR
	R021	NRSA02J-4R7NY	MF RESISTOR
	R022	NRSA02J-102NY	MG RESISTOR
	R023	NRSA02J-100NY	MG RESISTOR
	R101	NRSA02J-561NY	MG RESISTOR
	R102	NRSA02J-222NY	MG RESISTOR
	R103	NRSA02J-272NY	MG RESISTOR
	R104	NRSA02J-334NY	MG RESISTOR
	R105	NRSA02J-123NY	MG RESISTOR
	R106	NRSA02J-183NY	MG RESISTOR
	R107	NRSA02J-222NY	MG RESISTOR
	R108	NRSA02J-123NY	MG RESISTOR
	R110	NRSA02J-332NY	MG RESISTOR
	R111	NRSA02J-473NY	MG REGISTOR
	R112	NRSA02J-224NY	MG RESISTOR
	R113	NRSA02J-824NY	MG RESISTOR
	R114	NRS181J-273NY	MG RESISTOR
	R116	NRS181J-4R7NY	MG RESISTOR
	R117	NRSA02J-102NY	MG RESISTOR
	R118	NRSA02J-822NY	MG REAIATOR
	R119	NRSA02J-473NY	MG REGISTOR
	R120	NRS181J-104NY	MG RESISTOR
	R121	NRSA02J-222NY	MG RESISTOR
	R122	NRSA02J-682NY	MG RESISTOR
	R123	NRSA02J-562NY	MG RESISTOR
	R124	NRSA02J-153NY	MG RESISTOR
	R125	NRSA02J-223NY	MG RESISTOR
	R201	NRSA02J-561NY	MG RESISTOR
	R202	NRSA02J-222NY	MG RESISTOR
	R203	NRSA02J-272NY	MG RESISTOR
	R204	NRSA02J-334NY	MG RESISTOR
	R205	NRSA02J-123NY	MG RESISTOR
	R206	NRSA02J-183NY	MG RESISTOR
	R207	NRSA02J-222NY	MG RESISTOR
	R208	NRSA02J-123NY	MG RESISTOR

⚠	REF. NO	PARTS NO.	PARTS NAME
	R210	NRSA02J-332NY	MG RESISTOR
	R211	NRSA02J-473NY	MG REGISTOR
	R212	NRSA02J-224NY	MG RESISTOR
	R213	NRSA02J-824NY	MG RESISTOR
	R214	NRSA02J-273NY	MG RESISTOR
	R216	NRS181J-4R7NY	MG RESISTOR
	R217	NRSA02J-102NY	MG RESISTOR
	R218	NRSA02J-822NY	MG REAIATOR
	R219	NRSA02J-473NY	MG REGISTOR
	R221	NRSA02J-222NY	MG RESISTOR
	R222	NRSA02J-682NY	MG RESISTOR
	R223	NRSA02J-562NY	MG RESISTOR
	R224	NRSA02J-153NY	MG RESISTOR
	R225	NRSA02J-223NY	MG RESISTOR
	R302	NRSA02J-223NY	MG RESISTOR
	R303	NRSA02J-562NY	MG RESISTOR
	R304	NRSA02J-680NY	MG RESISTOR
	R305	NRSA02K-825NY	MG RESISTOR
	R306	NRS181J-220NY	MG RESISTOR
	R307	NRSA02J-333NY	MG RESISTOR
	R308	NRSA02J-6R8NY	MG RESISTOR
	R309	NRSA02J-100NY	MG RESISTOR
	R310	NRS181J-180NY	MG RESISTOR
	R311	NRS181J-271NY	MG RESISTOR
	R312	NRSA02J-222NY	MG RESISTOR
	R313	NRSA02J-562NY	MG RESISTOR
	R314	NRSA02J-562NY	MG RESISTOR
	R315	NRSA02J-105NY	MG RESISTOR
	R316	NRSA02J-272NY	MG RESISTOR
	R317	NRSA02J-104NY	MG RESISTOR
	R321	NRS181J-102NY	MG RESISTOR
	R322	NRS181J-103NY	MG RESISTOR
	R323	NRS181J-103NY	MG RESISTOR
	R324	NRSA02J-470NY	MG RESISTOR
	R325	NRSA02J-123NY	MG RESISTOR
	R326	NRSA02J-473NY	MG REGISTOR
	R327	NRSA02J-123NY	MG RESISTOR
	S301	QSS1A42-V01R	SLIDE SW
	S302	QSS1A23-V02	SLIDE SW
	S303	QSS1A23-V02	SLIDE SW
	S304	QSS1A22-V03	SLIDE SW
	TC02	NAT1110-100AZ	T.CAPACITOR
	T01	VQT5A01-101	IFT
	T02	VQT5F06-501	IFT
	VC01	QAP1222-001	V CAPACITOR
	VR01	NVP1402-103NZ	V RESISTOR
	VR301	VGZ0004-015	V RESISTOR

Governor P.C. Board (Front side)

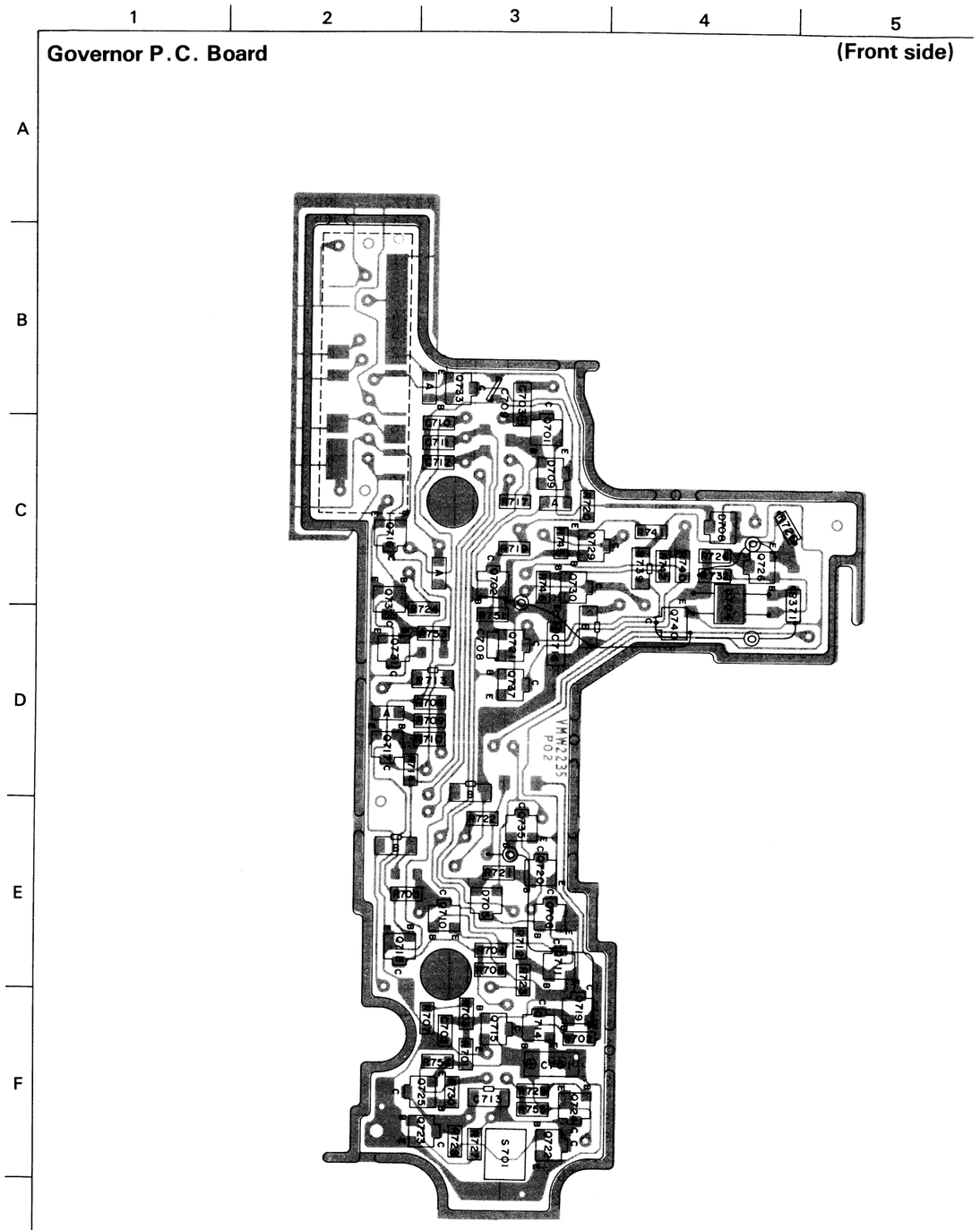


Fig. 6-4

Chip parts
A NRSA02J-ORONY
B NRS181J-ORONY

(Rear side)

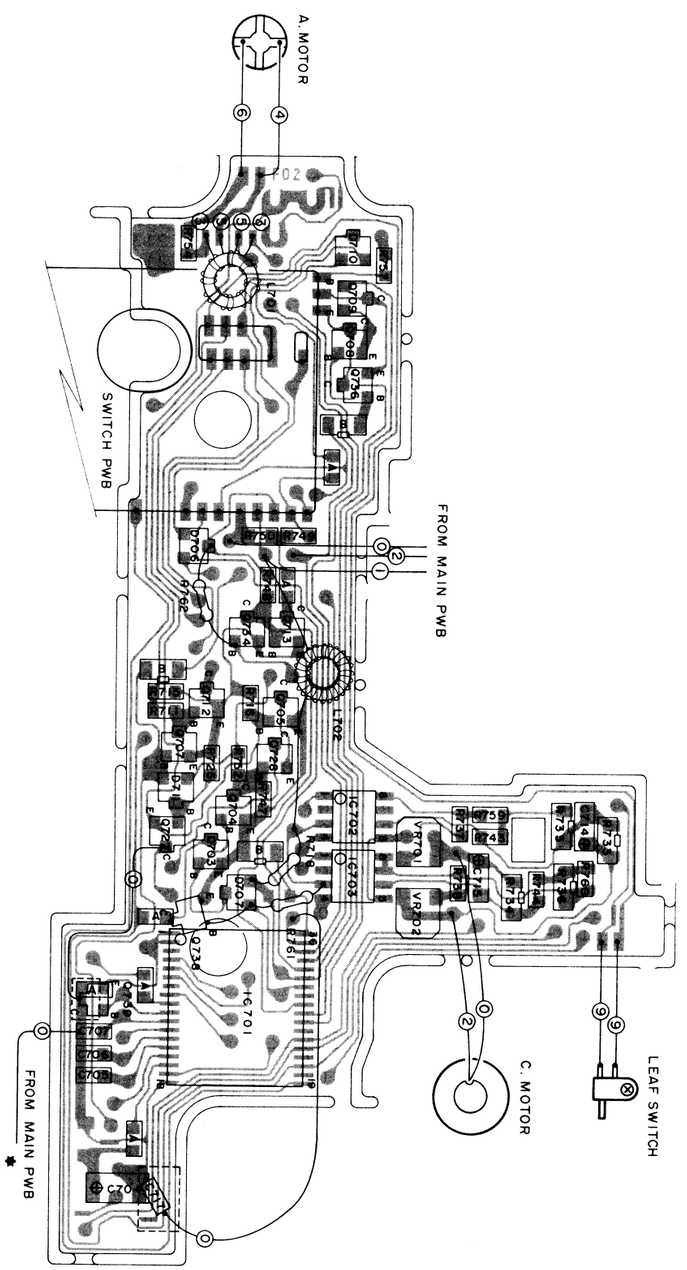


Fig. 6-5

Governor P.C. Board Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF. NO	PARTS NO.	PARTS NAME
	C701	QEF80GM-106LB	TS E CAPACITOR
	C702	NCB21EK-223AY	C CAPACITOR
	C703	NEF11CM-105RY	TS E CAPACITOR
	C704	QEF80GM-106LB	TS E CAPACITOR
	C705	NCB21EK-223AY	C CAPACITOR
	C706	NCB21EK-223AY	C CAPACITOR
	C707	NCB21EK-223AY	C CAPACITOR
	C709	QCF81EZ-224Y	C CAPACITOR
	C710	NCB21EK-223AY	C CAPACITOR
	C711	NCB21EK-223AY	C CAPACITOR
	C712	NCB21EK-223AY	C CAPACITOR
	C713	QCF81HZ-104Y	C.CAPACITOR
	C714	NEF11CM-105RY	TS E CAPACITOR
	C715	NEF11CM-105RY	TS E CAPACITOR
	C716	NEF10JM-225RY	TS E CAPACITOR
	C717	NEF10GM-475LY	TS E CAPACITOR
	C718	NEF10GM-475LY	TS E CAPACITOR
	D704	ON2170(Q)	PHOTO COUPLER
	D705	DAP202KT96	DIODE
	D706	DAP202KT96	DIODE
	D707	DAP202KT96	DIODE
	D708	DAP202KT96	DIODE
	D709	DAN202KT96	DIODE
	D710	DAN202KT96	DIODE
	D711	DAP202KT96	DIODE
	IC701	M51556P-T1	IC
	IC702	LA5524M-V-T1	I C (MOTOR GOV)
	IC703	LA5524M-V-T1	I C (MOTOR GOV)
	L701	VQZ0035-001	INDUCTOR
	L702	TAC000493-01	INDUCTOR
	Q701	DTA114TKT96	TRANSISTOR
	Q702	2SA1496-TB	TRANSISTOR
	Q703	2SA1179M.6TB	TRANSISTOR
	Q704	DTA114TKT96	TRANSISTOR
	Q705	DTA114TKT96	TRANSISTOR
	Q706	DTA114TKT96	TRANSISTOR
	Q707	DTA114TKT96	TRANSISTOR
	Q708	DTC114TKT96	TRANSISTOR
	Q709	DTC114TKT96	TRANSISTOR
	Q710	2SB970(Q,R)X	TRANSISTOR
	Q711	2SA1037K(R)T96	TRANSISTOR
	Q712	2SA1037K(R)T96	TRANSISTOR
	Q713	2SA1037K(R)T96	TRANSISTOR
	Q714	2SC2412K(R)T96	TRANSISTOR
	Q715	2SC2412K(R)T96	TRANSISTOR
	Q716	DTC114TKT96	TRANSISTOR
	Q717	2SC2412K(R)T96	TRANSISTOR
	Q718	2SC2412K(R)T96	TRANSISTOR
	Q719	2SB970(Q,R)X	TRANSISTOR
	Q720	2SB970(Q,R)X	TRANSISTOR
	Q721	DTA114TKT96	TRANSISTOR
	Q722	2SD1328(S,T)X	TRANSISTOR
	Q723	2SD1328(S,T)X	TRANSISTOR
	Q724	2SB970(Q,R)X	TRANSISTOR
	Q725	2SB970(Q,R)X	TRANSISTOR
	Q726	2SC3859-TB	TRANSISTOR
	Q727	2SC3398(EY)TB	TRANSISTOR
	Q728	2SA1037K(R)T96	TRANSISTOR
	Q729	2SB970(Q,R)X	TRANSISTOR
	Q730	2SB970(Q,R)X	TRANSISTOR
	Q731	DTC114TKT96	TRANSISTOR
	Q732	DTC114TKT96	TRANSISTOR
	Q733	DTC114TKT96	TRANSISTOR
	Q734	DTA114TKT96	TRANSISTOR
	Q735	DTA114TKT96	TRANSISTOR
	Q736	DTC114TKT96	TRANSISTOR
	Q738	2SA1496-TB	TRANSISTOR
	Q739	DTC114TKT96	TRANSISTOR
	R701	NRSA02J-683NY	MG RESISTOR
	R702	NRSA02J-124NY	MG RESISTOR
	R703	NRSA02J-223NY	MG RESISTOR
	R704	NRSA02J-103NY	MG RESISTOR
	R705	NRS181J-103NY	MG RESISTOR
	R706	NRSA02J-333NY	MG RESISTOR
	R707	NRSA02J-152NY	MG RESISTOR
	R708	NRSA02J-103NY	MG RESISTOR
	R709	NRSA02J-103NY	MG RESISTOR
	R710	NRSA02J-103NY	MG RESISTOR
	R711	NRSA02J-103NY	MG RESISTOR
	R712	NRSA02J-103NY	MG RESISTOR
	R713	NRS181J-103NY	MG RESISTOR
	R714	NRSA02J-103NY	MG RESISTOR
	R715	NRSA02J-333NY	MG RESISTOR
	R716	NRSA02J-102NY	MG RESISTOR
	R717	NRSA02J-103NY	MG RESISTOR
	R718	NRS181J-103NY	MG RESISTOR
	R719	NRSA02J-562NY	MG RESISTOR
	R720	NRSA02J-822NY	MG REAIATOR
	R721	NRSA02J-272NY	MG RESISTOR
	R722	NRSA02J-333NY	MG RESISTOR
	R723	NRSA02J-102NY	MG RESISTOR
	R724	NRSA02J-102NY	MG RESISTOR
	R725	NRSA02J-102NY	MG RESISTOR
	R726	NRSA02J-332NY	MG RESISTOR
	R727	NRSA02J-101NY	MG RESISTOR
	R728	NRSA02J-101NY	MG RESISTOR
	R729	NRSA02J-561NY	MG RESISTOR
	R730	NRSA02J-561NY	MG RESISTOR
	R731	NRSA02J-151NY	MG RESISTOR
	R732	NRSA02J-474NY	MG RESISTOR
	R733	ERS-L15G201U	MF RESISTOR
	R734	ERS-L15G201U	MF RESISTOR
	R735	ERS-L18J911U	MF RESISTOR
	R736	ERS-L18J911U	MF RESISTOR
	R737	NRSA02J-123NY	MG RESISTOR
	R738	NRSA02J-123NY	MG RESISTOR
	R739	NRS181J-332NY	MG RESISTOR
	R740	NRSA02J-332NY	MG RESISTOR
	R741	NRSA02J-561NY	MG RESISTOR
	R742	NRSA02J-561NY	MG RESISTOR
	R743	NRSA02J-222NY	MG RESISTOR
	R744	NRSA02J-222NY	MG RESISTOR
	R745	NRSA02J-104NY	MG RESISTOR
	R746	NRSA02J-104NY	MG RESISTOR
	R747	NRSA02J-104NY	MG RESISTOR
	R748	NRSA02J-104NY	MG RESISTOR
	R749	NRSA02J-103NY	MG RESISTOR
	R750	NRSA02J-333NY	MG RESISTOR
	R751	NRSA02J-222NY	MG RESISTOR
	R752	NRSA02J-103NY	MG RESISTOR
	R753	NRSA02J-474NY	MG RESISTOR
	R754	NRSA02J-4R7NY	MF RESISTOR
	R755	NRSA02J-104NY	MG RESISTOR
	R756	NRSA02J-104NY	MG RESISTOR
	R757	NRSA02J-100NY	MG RESISTOR
	R759	NRSA02J-222NY	MG RESISTOR
	R760	NRSA02J-222NY	MG RESISTOR
	R761	NRSA02J-103NY	MG RESISTOR
	R762	NRS181J-103NY	MG RESISTOR
	S701	QSP2K21-V01	PUSH SWITCH
	VR701	NVP1402-103NZ	V RESISTOR
	VR702	NVP1402-103NZ	V RESISTOR

Switch P.C. Board

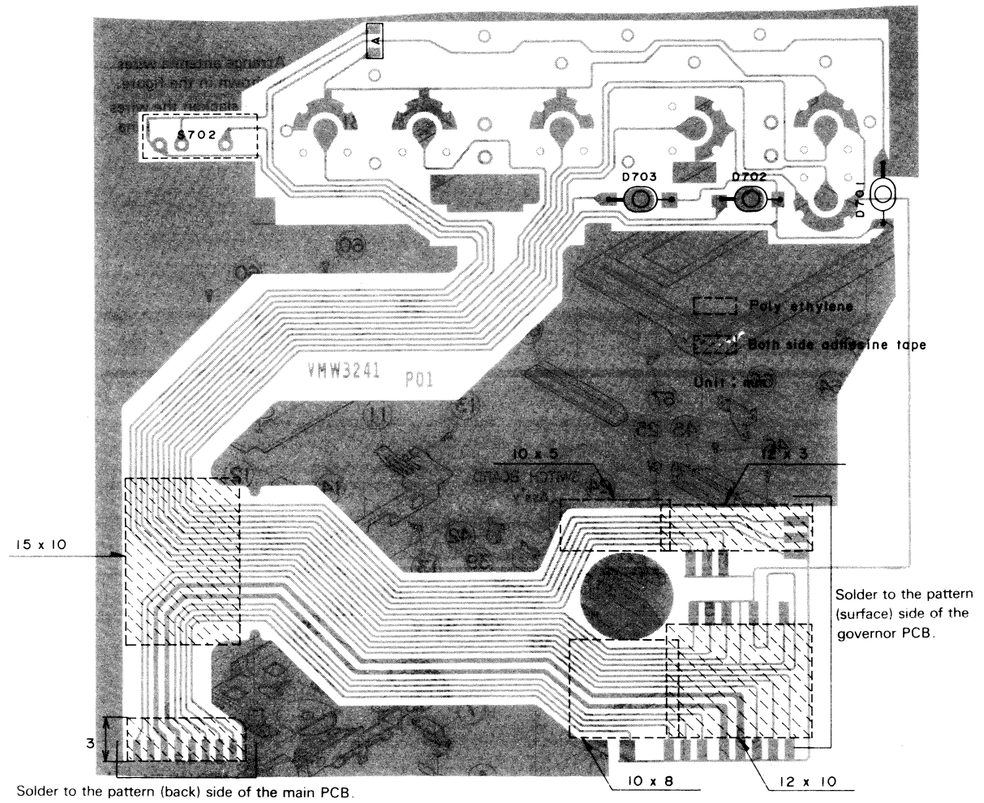


Fig. 6-6

Switch Board Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	S702	QSSIA13-V01	Slide Switch		1
	D701	GL1PR11	LED	for Tuner	1
	D702	GL1EG11	"	FWD	1
	D703	GL1PR11	"	REV/REC	1
		NRSA02J-0RUNY	Chip Resistor	0 Ω	1

7 Exploded View of Enclosure Assembly and Parts List

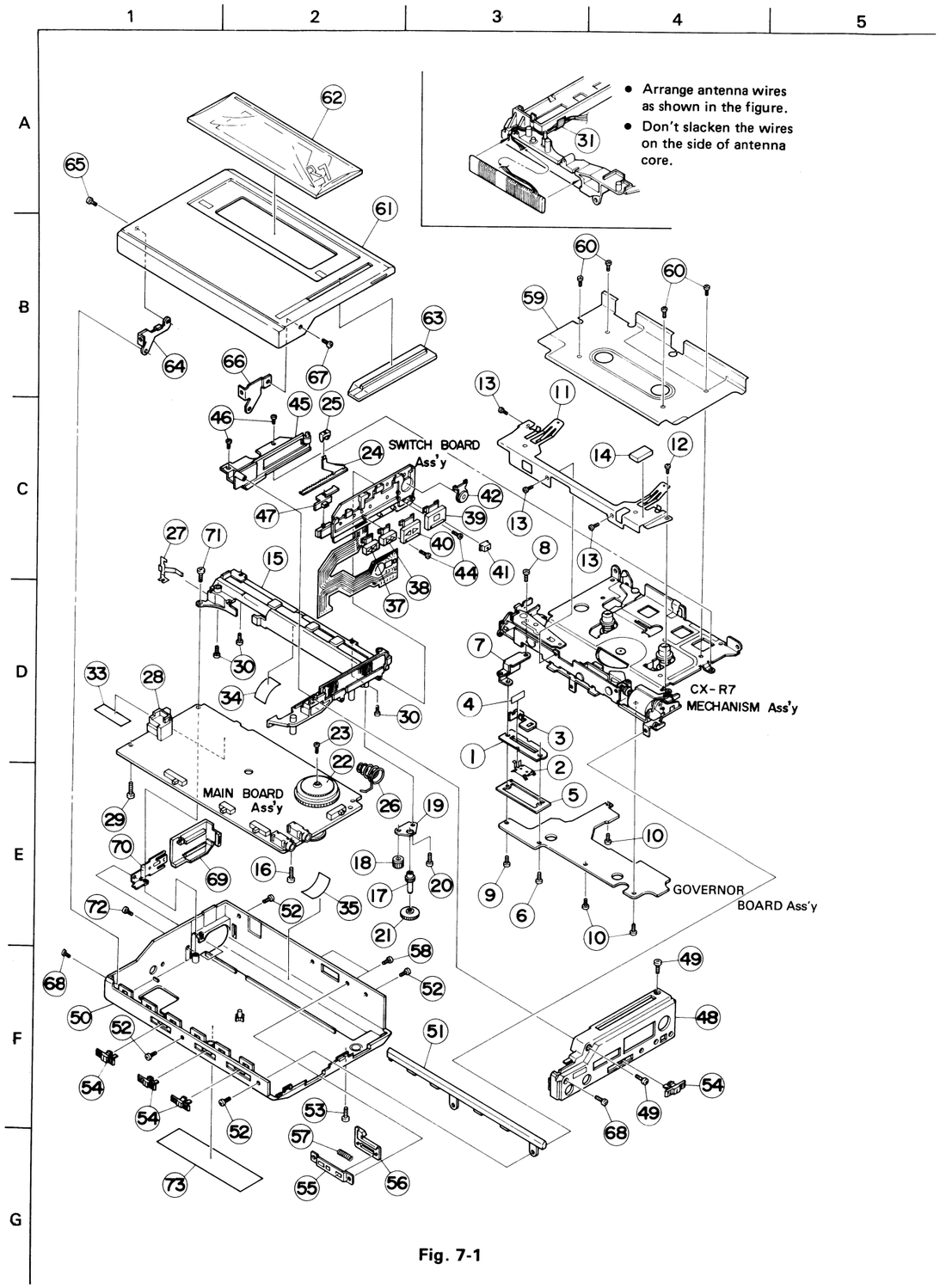


Fig. 7-1

Enclosure Assembly Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	VYH6255-001	SW COVER		1
	2	VYH6256-001	SLIDER		1
	3	VYH6325-001	HOLDER		1
	4	VYSS1R1-040	SPACER		1
	5	VYH6257-001	SW CASE		1
	6	SPSK1425M	MINI SCREW		1
	7	VYH6269-001	SIDE BRACKET		1
	8	SPSH1425N	MINI SCREW	MECHA X S.BKT	1
	9	SPSK1435N	MINI SCREW	MECHA X GPCB	1
	10	SPSH1425N	MINI SCREW	MECHA X GPCB	3
	11	VKL3829-002	STABILIZER		1
	12	SPSK1420M	MINI SCREW		1
	13	SSSK1416M	MINI SCREW		3
	14	VYSH103-055	SPACER	2.5 X 5 X 10	1
	15	VYH1156-001	CHASSIS		1
	16	SPSN1745M	MINI SCREW	FOR MAIN PCB	1
	17	VYH6204-001	TUNING GEAR		1
	18	VYH6205-001	SUB GEAR		1
	19	VYH6265-001	GEAR PLATE		1
	20	SPSN1745M	MINI SCREW	FOR G.PLATE	1
	21	VXL4283-001	TUNING KNOB		1
	22	VYH6206-001	DRUM		1
	23	SPSH1725N	SCREW	FOR DRUM	1
	24	VJN4111-001	NEEDLE		1
	25	VJD5015-001	CAP		1
	26	VYH6251-001	BATT SPRING		1
	27	VYH6252-001	CONTACT		1
	28	VYH6254-001	JACK HOLDER	DC/LED	1
	29	SPSH1425M	MINI SCREW	MAIN PCB X MECHA	1
	30	SPSH1425M	MINI SCREW	CHASSIS X MECHA	3
	31	VYSA1R4-062	SPACER	BAR ANT WIRE	2
	33	VYSA1R4-030	SPACER	MOTOR WIRE 5X30	2
	34	VYSA1R4-030	SPACER	BATT	1
	35	VYSA1R4-005	SPACER		1
	37	VXP4568-001	BUTTON	REW	1
	38	VXP4568-002	BUTTON	FF	1
	39	VXP4568-003	BUTTON	STOP	1
	40	VXP4568-004	BUTTON	PLAY	1
	41	VXP4576-001	BUTTON	RA/CAS	1
	42	VXP4569-001	BUTTON		1
	44	SPSJ1435M	SCREW	CHASSIS X TACT	2
	45	VYH3389-001	NEEDLE GUIDE		1
	46	SPSH1425M	MINI SCREW	N.GAIDE X MECHA	2
	47	VXS4218-001	SLIDE KNOB	FOR SAFETY	1
	48	VJC2265-002	SIDE PANEL		1
	49	SPSN1745M	MINI SCREW	S.PANEL X N.GAIDE	2
	50	VJC1541-003	BOTTOM CASE		1
	51	VJD3617-001	FITTING		1
	52	SPSH1425M	MINI SCREW	FOR BOTTOM	4
	53	SPSJ1760M	MINI SCREW	FOR BOTTOM	1

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	54	VXS4204-001	SLIDE KNOB		4
	55	VYH6262-001	LOCK PLATE		1
	56	VXS4205-002	LOCK KNOB		1
	57	VKW3001-190	COMP SPRING	FOR LOCK	1
	58	SPSH1425M	MINI SCREW	FOR LOCK	2
	59	VJD3616-001	INNER LAY		1
	60	SPSK1416M	MINI SCREW	FOR INNER LAY	4
	61	VJT3188-003	CASSETTE LID		1
	62	VJK3351-001	CASSETTE LENS		1
	63	VJK4272-001	NEEDLE LENS		1
	64	VYH6263-002	BRACKET(L)		1
	65	SSSH1428M	SCREW	FOR LID	1
	66	VYH6264-001	BRACKET(R)		1
	67	SSSH1428M	SCREW		1
	68	VYH4043-003	SPECIAL SCREW	LID X BOTTOM	2
	69	VJC4113-001	BATT COVER		1
	70	VYSS1R3-019	SPACER		1
	71	SPSN1755N	MINI SCREW	CONTACT X BOTTOM	1
	72	SPSH1425M	MINI SCREW	CONTACT X BOTTOM	1
	73	VYN5110-002	NAME PLATE		1

Ass'y Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	61, 62, 63	ZCCXR7K-CBK	Cassette Lid Ass'y	Black	1
	"	ZCCXR7K-CRD	"	Red	1

8 Exploded View of Mechanism Assembly

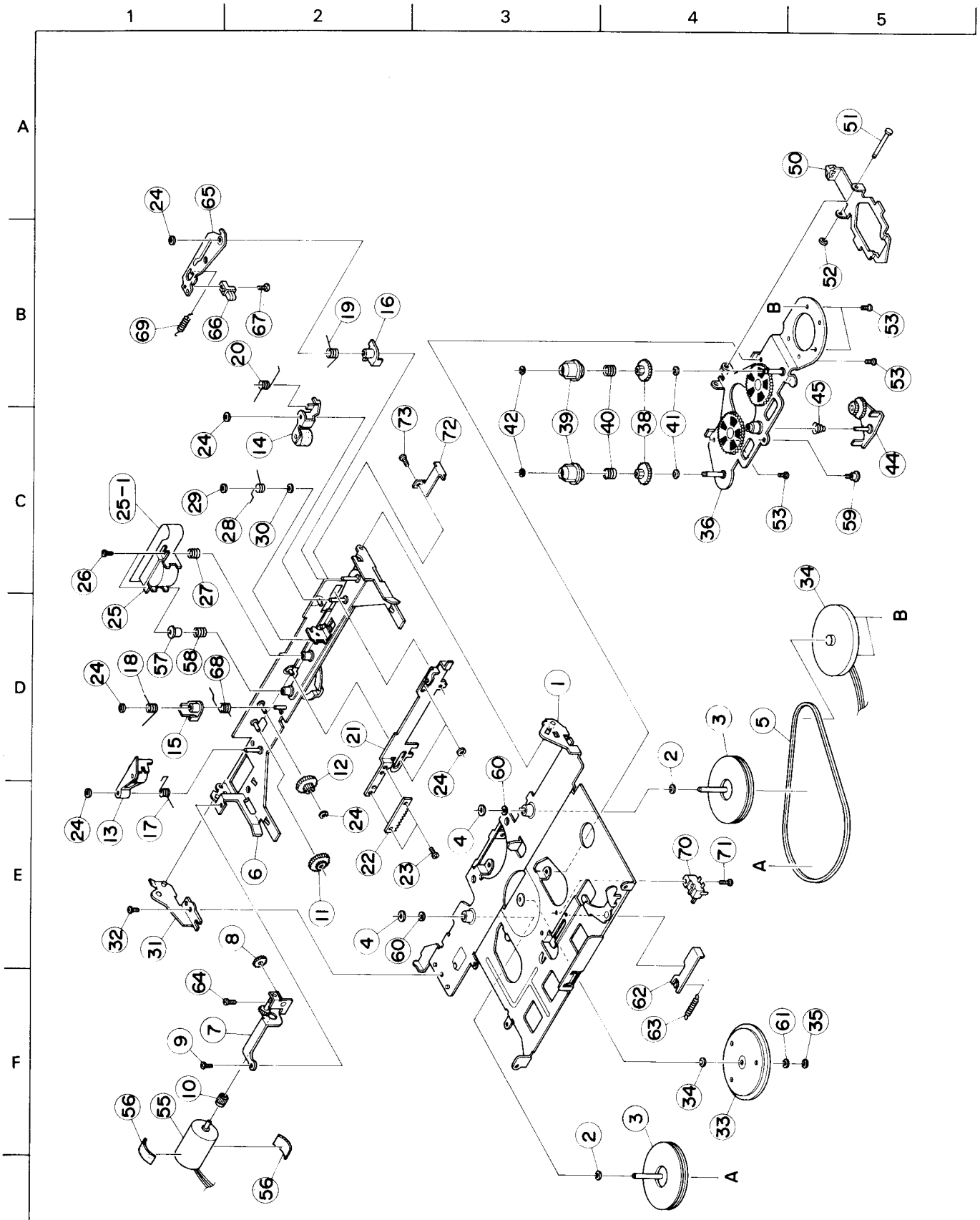


Fig. 8-1

Mechanism Assembly Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	VKL2296-00B	CHAS.BASE ASS'Y		1
	2	Q03093-830	WASHER		2
	3	VKF3139-00D	FLYWHEEL ASS'Y		2
	4	WDM153125	SLIT WASHER		2
	5	VKB3000-099	BELT		1
	6	VKL2298-00C	SUB.CHAS.ASS'Y		1
	7	VKL3713-00B	A.BKT ASS'Y		1
	8	VKS4821-001	A GEAR 3		1
	9	SPSK1420M	MINI SCREW		2
	10	VKS4822-002	A GEAR(1)		1
	11	VKS4823-001	A GEAR(4)		1
	12	VKS4824-001	A GEAR(5)		1
	13	VKP4181-00B	P.ROLLER ASS'Y	FWD	1
	14	VKP4182-00B	P.ROLLER ASS'Y	REV	1
	15	VKS4825-002	P.ROLLER LEVER	FWD	1
	16	VKS4933-001	P.ROLLER LEVER	REV	1
	17	VKW4622-001	TORSION SPRING		1
	18	VKW4623-001	TORSION SPRING		1
	19	VKW4624-001	TORSION SPRONG		1
	20	VKW4574-003	TORSION SPRING		1
	21	VKL6057-00A	SLIDER ASS'Y		1
	22	VKS4935-001	RACK		1
	23	VKZ4329-001	MINI SCREW		2
	24	WDL122525-4	SLIT WASHER		7
	25	VGH0441-002	R/P HEAD ASY		1
	25-1	VMW3239-001	PW BOARD		1
	26	SPSH1725N	SCREW		2
	27	VKW4577-001	COMP.SPRING		1
	28	VKW3001-194	COMP.SPRING		1
	29	Q03093-829	WASHER		1
	30	Q03093-630	WASHER		1
	31	VKL5936-00G	S.C.BRACKET		1
	32	SPSK1716M	SCREW		1
	33	VKR3131-00F	MAIN PULY ASS'Y		1
	34	Q03093-848	WASHER		1
	35	WDL082019-9	SLIT WASHER		1
	36	VKL2301-00B	REEL BASE ASY		1
	38	VKR4443-001	REEL GEAR		2
	39	VKR3133-002	REEL FEATHER		2
	40	VKW4580-001	COMP.SPRING		2
	41	Q03093-835	WASHER		2
	42	WDL122525-4	SLIT WASHER		2
	44	VKL5938-00B	MID.LEVER ASS'Y		1
	45	VKW4579-002	COMP.SPRING		1
	50	VKL3716-003	ELEVATOR		1
	51	VKH4859-001	SHAFT		1
	52	WDL082025-4	SLIT WASHER		1
	53	SPSK1716M	SCREW		2
	53	SPSK1716M	SCREW		2
	54	FN26CA	C.MOTOR		1

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	55	TWS-154	A.MOTOR		1
		TWS-154	A.MOTOR		1
	56	VYSA1R4-031	SPACER		2
	57	SPSH1740M	M SCREW		1
	57	VKH4960-001	HEAD COLLER		1
	58	VKW4627-001	COMP.SP.(HEAD)		1
	59	VKZ4357-001	SCREW		1
	60	VKZ4035-002	WASHER		2
	61	VKZ4035-003	WASHER		1
	62	VKL6063-001	SLIDE BAR		1
	63	VKW4618-001	TENSION SPRING		1
	65	VKL6058-00B	E.HEAD L.ASS'Y		1
	66	VGH0212-418	E.HEAD ASS'Y		1
	68	VKW4626-001	SPRING		1
	69	VKW3002-201	TENSION SPRING		1
	70	VSH1142-001	SWITCH		1
	71	SPSH2050M	SCREW		1
	72	VYH6270-001	SW ARM		1
	73	SPSK1414M	MINI SCREW		1
					1

9 Packing and Packing Parts List

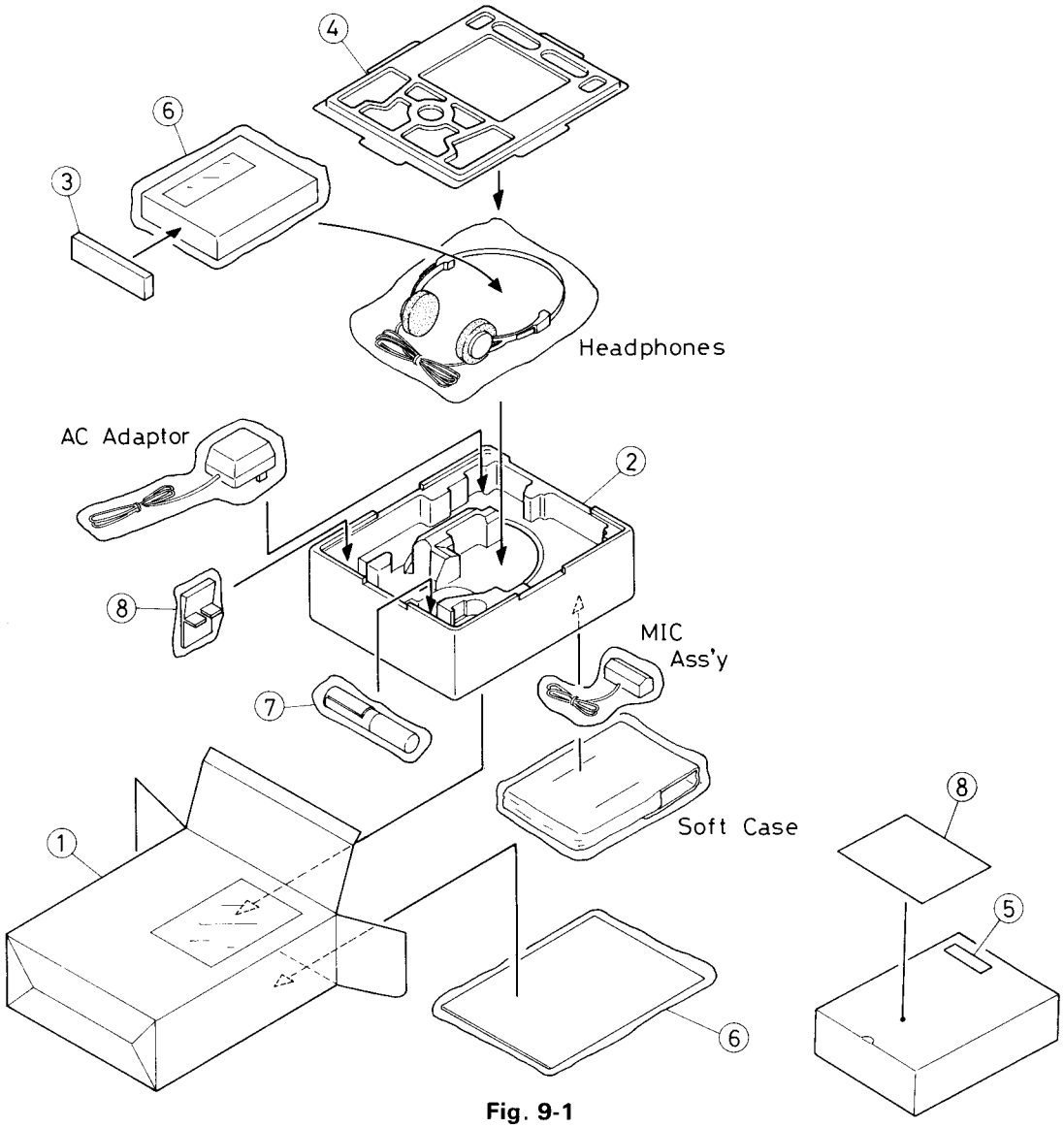


Fig. 9-1

Packing Parts List

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Discription	Q'ty
	1	VPC5110-011	Carton		1
	2	VPH1381-001	Cushion		1
	"	-002	"	U Version	1
	3	VPK4208-003	Spacer		1
	4	VPH2170-001	Cushion		1
	5	VNC5003-005	Serial Cabel		1
	"	VPZ4001-002	"		1
	6	QPGA012-02505	Poly Bag	for Instruction Book, Main Unit	1
	7	QPGA008-01205	"	for Battery Ass'y	1
	8	QPGA005-00703	"	for Mic Stand Ass'y	1
	8	E66416-003	"	for Warranty	

10 Accessories

⚠ Parts are safety assurance parts
When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Discription	Q'ty
		VNN5110-611	Instruction Book		1
		" -801	"	U Version	1
		BT20047C	Warranty Card	J Version	1
		BT20025H	"	C Version	1
		BT20046B	Special Reply Card		1
		BT20071A	SVC Center List		1
		VGZ0062-00B	Rechargeable Battery Ass'y		1
		VGB0030-002	AC Adaptor	J Version	1
		" -003	"	C Version	1
		" -007	"	U Version 120V/220V	1
		VJY4021-001	Head Phones		1
		VJY4022-00B	MIC Ass'y		1
		VJD5030-00A	MIC Stand Ass'y		1
		VJB3020-00A	Soft Case		1
		VNC1200-002	Copyright Law Warning		1
		VNC5311-204	Caution Card	U Version for PX	1
		" -203	"	" for EES	1
		VO4062-003	Siemens Plug	U Version	1

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